



Chagrin Falls Region Alternative Transportation Study

FINAL REPORT

August 23, 2010

Prepared for:
Cleveland Metroparks • Geauga Park District • Moreland Hills
Northeast Ohio Areawide Coordinating Agency • Orange Village • South Russell Multipurpose Trail Foundation
Village of Bentleyville • Village of Chagrin Falls • Village of South Russell

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Introduction

The Village of Chagrin Falls is a charming community, endowed with many local assets and regional amenities. The Village serves as home for just over 4,000 residents and 410 businesses. With its appealing downtown, located on the scenic Chagrin River, and rich in historic architecture, restaurants, upscale shopping, and festivals, the village serves as a regional, national, and international attraction for over 12,500 visitors annually.

Located on the east edge of Cuyahoga County, Chagrin Falls is immediately east of the Cleveland Metroparks' Emerald Necklace, and west of Geauga Park District's Frohning Meadows and The West Woods. This location of the village and overall study area presents opportunities to connect to and further complete the regional alternative transportation network. Completing another section of the Emerald Necklace trail and joining to the Shaker Boulevard trail will enable residents to travel southwest to the Towpath Trail and Cuyahoga Valley National Park, and northwest to downtown Cleveland and Lake Erie. (See Figures 33 & 34.)

Access to many of the local and regional assets within and beyond the Chagrin Falls Region via pedestrian or other non-motorized means, however, is difficult. Many roads and bridges in this long-established, rural area are narrow and steep, without sidewalks or much room beyond the pavement edge. These conditions, coupled with high vehicular volumes and speeds, create a hazardous environment for walkers, joggers, commuters, and cyclists.

The goals of this study were:

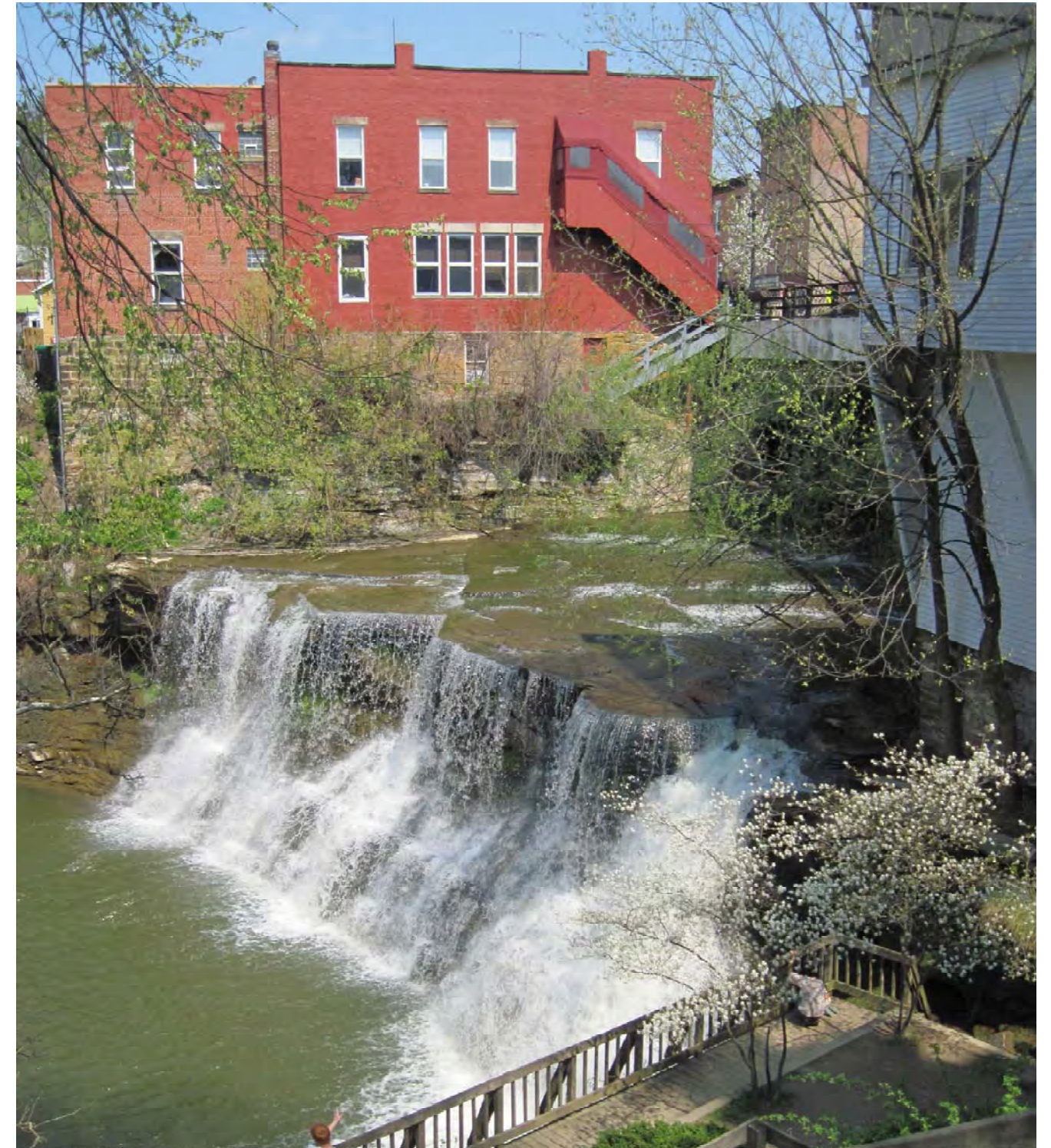
1. Develop a comprehensive plan, through extensive public input, which will
2. Enhance the quality of life and economic viability of the region,
3. Create a more complete network of non-motorized and pedestrian routes and trails, locally and regionally,
4. Improve motorist and non-motorist safety, and
5. Strengthen connections to key community resources.

A Transportation for Livable Communities Initiative (TLCI) Grant, administered through the Northeast Ohio Area Coordinating Agency (NOACA,) funded this study. A local match of 20% was provided by The Village of Chagrin Falls, in conjunction with the project co-sponsors of Moreland Hills, Cleveland Metroparks, Geauga Park District, the South Russell Multipurpose Trail Foundation, and the Villages of Bentleyville, Orange, and South Russell.

Some of the TLCI goals include:

- Enhancing economic viability
- Enhancing citizens' quality of life
- Broadening the range of transportation choices
- Reducing pollution and encouraging energy conservation
- Promoting a healthier community
- Improving the safety and efficiency of the transportation system.

As is often the case for rural suburbs, the study area communities are structured primarily toward the internal combustion engine. An implemented Chagrin Falls Region Alternative Transportation Plan will reduce dependence on the automobile, meet the study goals and TLCI goals, and will benefit local residents and outside visitors alike.



Acknowledgements

The following Stakeholder Committee members and consultants worked together as the Planning Team, and guided the planning process and development of the report for the study:

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Susan Renda
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Existing Conditions Data

The following entities generously provided data for the existing condition and current study inventory:

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Cleveland Metroparks

Cleveland Touring Club

CT Consultants, Inc.

Cuyahoga County Planning Commission

Cuyahoga County Engineer’s Office

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Lake Erie Wheelers

NOACA

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Orange Village

Safe Routes to School Chagrin Falls Team

South Russell Multipurpose Trail Foundation

Steven Hovancsek & Associates, Inc.

Village of Chagrin Falls

Village of South Russell

Western Reserve Wheelers

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NOACA

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South Russell Multipurpose Trail Foundation

Village of Chagrin Falls

Village of South Russell

Thanks to our citizens!

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Terminology

Prior to discussing alternative transportation, it is important to understand a number of terms:



Alternative Transportation (AT)

Any means of transportation which does not involve a motorized vehicle. Examples include walking, hiking, running, bicycling, and in-line skating.

AT Facility

Any installed form of alternative transportation.

Right-of-Way (ROW)

The area along each roadway that is publicly owned and maintained. ROW widths vary widely; refer to Figure 39 for widths within the study area.



All-Purpose Trail (APT)

A path segregated from motorized traffic for use by non-motorized and non-equestrian traffic. APT's can be paved or unpaved.



Bike Lane

A portion of roadway that has been designated by signing, pavement striping, and other pavement markings for the exclusive use of bicyclists. Some cyclists prefer the comfort level of bike lanes, but others are unsure how to negotiate left hand turns from bike lanes.



Signed Shared Roadway (SSR)

A Roadway with adequate width and in adequate condition to accommodate safe bicycle travel.



Bike Route/Bikeway

Any combination of Signed Shared Roadways, Bike Lanes, and APT's which provide cyclists a route between destinations.



Wide Curb Lane

A wide curb lane is the lane nearest the curb that is wider than a standard lane, and provides extra space so that the lane may be shared by motor vehicles and bicycles. This is used in urban areas, with multiple lanes of traffic.



Sharrow

On signed shared roadways, Shared Roadway Markings show where cyclists can ride in the street, without being hit by a suddenly opened car door (the "door zone"). The sharrow is installed 11 feet from the curb, which locates it approximately 4' from a parked vehicle.



Trail Head

A loading and unloading point along an APT, which usually provides parking, information about the trail, trash receptacles, and sometimes includes restrooms, concessions, and picnic tables.



Stakeholder & Community Engagement

Stakeholder Committee

A Stakeholder Committee was formed with representatives from each of the project co-sponsors. Together, the group guided the planning process and the development of this report, through a series of meetings. Minutes from the Stakeholder Meetings can be found in Appendix A.

Community Engagement

In order to create as comprehensive a plan as possible, one of the study goals was to present many different opportunities for the public to shape the planning process through input. Throughout the study, a dialog between citizens, stakeholders and the consultant proceeded by means of the following channels:

- 1) **Public Meetings:** The community at-large contributed to the plan through a series of three community workshops. Via press releases in local newspapers, flyers, emails to interested user groups, announcements on several stakeholders' websites, and a local bike shop's website, a serious effort was made to notify interested citizens. All comments at the meetings were recorded and considered for incorporation in the plan. For a complete review of each of the workshops and lists of attendees, refer to Appendix B. The following is a summary of the public meetings.
 - a) **Public Meeting #1:** The consultant presented the observations and conclusions described in the Existing Conditions and Opportunities & Constraints portion of this report. The attendees then broke out into smaller groups to discuss ideas, concerns, and opinions about the project. At the end of the meeting, the groups provided a synopsis of their discussions.

- b) **Public Meeting #2:** After the first meeting, the planning team processed their observations and the general public's input, and formulated a preliminary concept plan (for more information, refer to the Plan Development section of this report.) This plan was the basis of conversation at the second public meeting. Attendees were encouraged to comment verbally and with notes on copies of the plan.
 - c) **Public Meeting #3:** The planning team returned to the third meeting with a refined plan, based on comments from the previous meetings, and a prioritized list of recommendations with associated costs. A healthy, vigorous dialog took place, with the attendees offering many questions, concerns, and opinions.
- 2) **Surveys:** As part of the first public meeting, and to offer those individuals who were unable to attend the meeting a chance to provide input, the planning team developed a survey to determine what types of AT local citizens used, why they used them, typical and desired AT destinations, current problems with AT in the study area, and a wish list of AT solutions they would like to see.

At the second public meeting, a Village of Bentleyville representative asked for a survey to determine interest in replacing a missing vehicular bridge over the Chagrin River with a pedestrian bridge.

The first survey was posted on several co-sponsors' websites, and both surveys were distributed via co-sponsors' email distribution lists. With this non-scientific delivery in mind, the consultant used the data from the returned forms not as the overriding indicator of public opinion,

but as one of many sources of civic participation in the process. See Appendix D for summaries.

- 3) **Websites:** As is mentioned earlier in this section, several of the co-sponsors and a local bike shop provided information about the project and public meetings on their websites, and provided links to the first survey. Additionally, an online forum was created with a blog, but no one posted comments.
- 4) **Email, Postal Mail, and Phone:** Stakeholders and members of the general public sent suggestions and questions to the consultant via all these routes. The planning team replied to and/or evaluated all contributions for incorporation into the plan.



Public Meeting #1



Existing Conditions

The study area consists of the Village of Chagrin Falls at the core, with a 2 mile radius extending from the downtown area. This radius covers all of Chagrin Falls, a majority of Bentleyville, the northwest corner of Bainbridge, the southwest corner of Russell Township, all of Chagrin Falls Township, and the southeast edge of Hunting Valley. All of Moreland Hills and the Village of South Russell, and the eastern quarter of Orange were also included in the study area, as was requested by the communities. For purposes of this study, this will be referred to as the “Chagrin Falls Region,” not to be mistaken with the Chagrin River Valley. See Figure 1.

In order to understand the study’s local and regional context, the planning team reviewed and coordinated with past and present pedestrian and bicycle plans for communities within and surrounding the study area:

- Chagrin Falls Safe Routes to School Plan, 2009
- Orange Village Bikeway Study, 2009
- Solon Bicycle and Pedestrian Plan, 2002
- Moreland Hills Bikeway Study, 1999
- South Russell Multipurpose Trail Plan, 2008
- Mill Street/Cleveland Street Pedestrian Route Report, 2010
- The Cuyahoga County Planning Commission’s greenspace and trail plans
- NOACA’s Regional Bicycle Transportation Plan, 2008.
- NOACA Bicycle Transportation Map, 2009

The planning team documented current conditions by compiling Geographical System Information data, traffic engineering data, and local cycling club routes, by performing a series of walk- and drive-throughs of the study area, and by listening to stakeholder meeting and public meeting participants. A detailed inventory of existing conditions data can be found in Appendix C.

From the above-mentioned surveys, several observations were made:

1. Approximately 7,100 residential parcels exist in the study area. Assuming one household per parcel, and with an average of 2.4 individuals per household, the plan could provide improved opportunities for recreation, exercise, commuting, and running errands to 17,040 citizens.
2. Conceptually, the roads leading out from Chagrin Falls are arranged in a radial pattern, with local or regional destinations along the majority of them. See Figure 34.
3. “All routes lead to Chagrin Falls.” Public Meeting #1 participants’ personal routes and cycling club ride routes all flow through downtown Chagrin Falls, as is shown in Figure 35.
4. The section of Chagrin River Road in the study area is an important link within the Cleveland Metroparks’ Emerald Necklace trail network.

5. A relatively short connector between the study area and the existing trail along Shaker Boulevard would link the study area residents to the Lake Erie lakefront and downtown Cleveland through a series of existing and soon-to-be completed all-purpose trails. See Figure 33.
6. Heavy and/or mature vegetation exists along a high percentage of the roads.
7. Intermittent and perennial streams and the Chagrin River run throughout the study area. See Figure 31.
8. Numerous wetlands exist within the Chagrin River floodplain, per Figure 31.
9. Sidewalks typically only exist in the central portion of Chagrin Falls. Refer to Figure 32.
10. There are many paved and unpaved trails in the local parks and open spaces, but no connections between them. See Figure 32.
11. South Chagrin Reservation is a popular destination, and serves as a conduit to places farther west and south.

12. Miles Road is an important, highly used, but narrow and highly trafficked AT connector between South Chagrin Reservation and Chagrin Falls. See Figure 35.
13. Bell Street is also travelled frequently by non-vehicular traffic, particularly the closer one is to Chagrin Falls, as is shown in Figure 35.
14. SOM Center carries the highest volume of vehicular traffic along its full study-area-length of all the study area roads. Route 306 has the next highest volume.
15. Parks and open spaces are distributed throughout and beyond the study area relatively evenly. Refer to Figure 30.
16. Bridle trails are located throughout the South Chagrin Reservation, parallel to Chagrin River Road, and on the abandoned railroad right-of-way south of Chagrin Falls. See Figure 67.

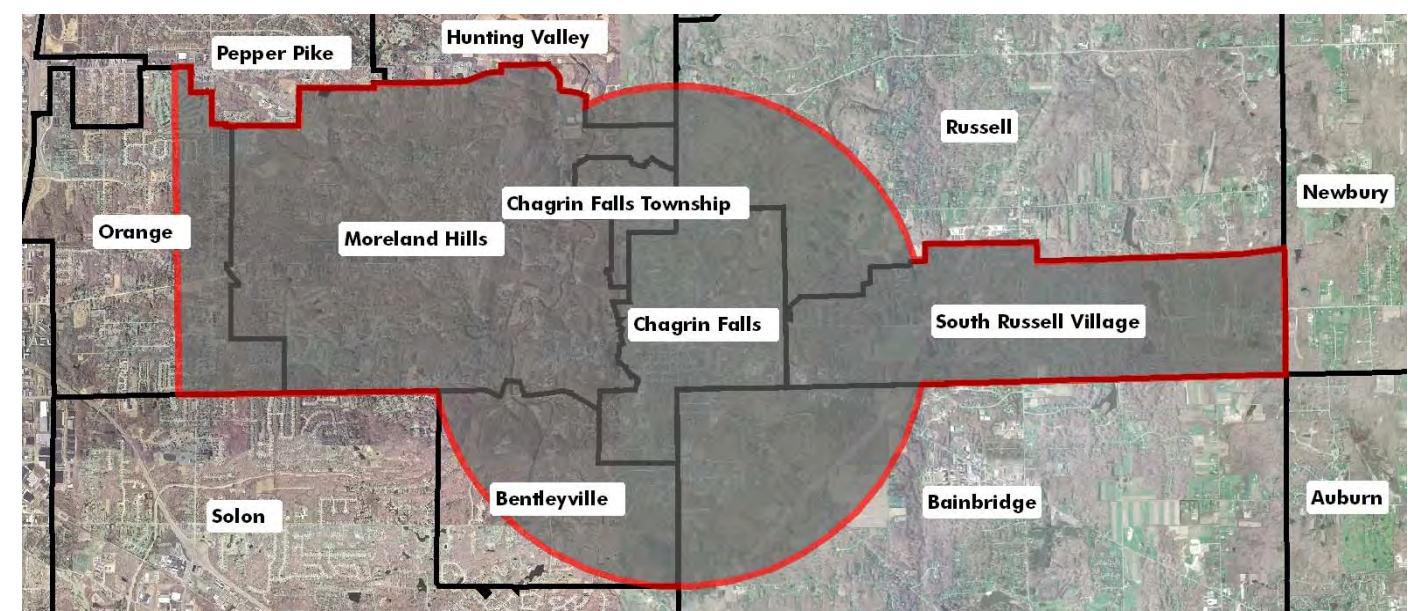


Figure 1: Study Area



Opportunities & Constraints

OPPORTUNITIES



Waterways and Topography

Streams, rivers and hillsides are key players in the natural beauty of the Chagrin Falls region.



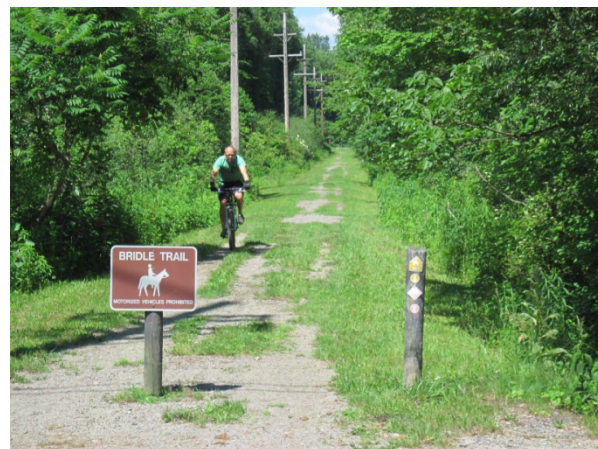
First Energy Transmission Corridor

This wide corridor could provide a link between Chagrin Road/Washington Street and the West Woods Reservation, pending acceptance by First Energy and a segment owned by the Whitetail Run Community.



Existing AT Routes

Bike lanes on Harper Road and Liberty Road and the APT in South Chagrin Reservation are ready to be connected to.



Abandoned Railroad Corridor

Currently used by several forms of AT, paving a strip of the corridor would encourage additional use.



Local History

Local residents and outside visitors could learn more about the Chagrin Falls region on an AT circuit that joins the numerous historic event sites and national historic register sites in the area.



Beech Brook

The parcel owned by Beech Brook, along the south edge of Pepper Pike, could offer a link between Lander Road and the Orange School District campus. The connector would allow non-motorists from the south to circumvent the Lander/Chagrin traffic circle.



CONSTRAINTS



Travel Way Widths

In many locations, roads, bridges, and/or Rights-of-Way are very narrow, leaving little room for an AT facility.



Obstacles within the Right of Way

Utility poles, mailboxes, guardrails, drainage ditches, catch basins, culverts, driveways, and heavy vegetation must be taken into consideration.



Traffic volume and speed

As road classifications increase, so does vehicular traffic volume and speed. As volume and speed increases, pedestrian and cyclist comfort and safety decreases.



Topography

Grades along roads and immediately next to roads limit AT facility options in some areas. Some citizens did not, however, shy from routes with steep grades, as those routes could provide an exercise/training opportunity.



Waterways

While streams and rivers are aesthetically pleasing, they become an obstacle to traverse.



Sidewalks

Sidewalks exist along a majority of the Chagrin Falls core, but are needed along specific roads that connect residents with destinations.



Design Standards

Design standards are developed for the safety of the end user and those who may be affected by actions of the end user.

ODOT & AASHTO

All AT projects built with any involvement of federal dollars are required to adhere to the minimum standards set by the The Ohio Department of Transportation and the American Association of State Highway and Transportation Officials. In addition to the standards shown in the sketches below, the following requirements exist for APT's:

- Two-way bridge width: 14' min.
- Minimum deflection angle at 20MPH: 1°54'
- Maximum grade along APT: 5%
- Minimum side clearance: 3'

Cleveland Metroparks

1. Maintain existing bridle trails. If impacted, mitigate by moving the bridle trail.
2. The APT should be a minimum of 10' from the road edge, for snow storage and separation from vehicular traffic.
3. Minimize the disturbance of existing vegetation and wetlands. Where vegetation is disturbed, install new plantings to maintain the density of the vegetative cover.

Ohio Horseman's Council

Although horseback riding is a means of AT, the TLCI program does not include funding for the development of new bridle trails. The study proposes new bridle trails only where an existing trail is impacted. In those situations, the Council offers the following guidelines:

1. Maintain 10' minimum between the bridle trail and the APT.
2. Where the bridle trail and APT must be closer, provide a visual barrier between the two.
3. Clear vegetation 5' wide for a single track trail.
4. Clear vegetation 8' wide for a double track trail.
5. Trail should be firm, but have a natural appearance and feel.

Non-standard Designs

The planning team understands citizens' concerns particular to this project:

- Maintaining the rural feel of the area is highly desirable.
- Residents want to maintain as much existing vegetative buffer as possible between the public road and their property.
- Cost containment is always a concern.

The municipality responsible for implementing an AT facility must balance its citizens' interests with the risk it assumes with non-standard solutions.

Design requirements for *non-federally* funded projects varies widely, depending on geographic location of the project.

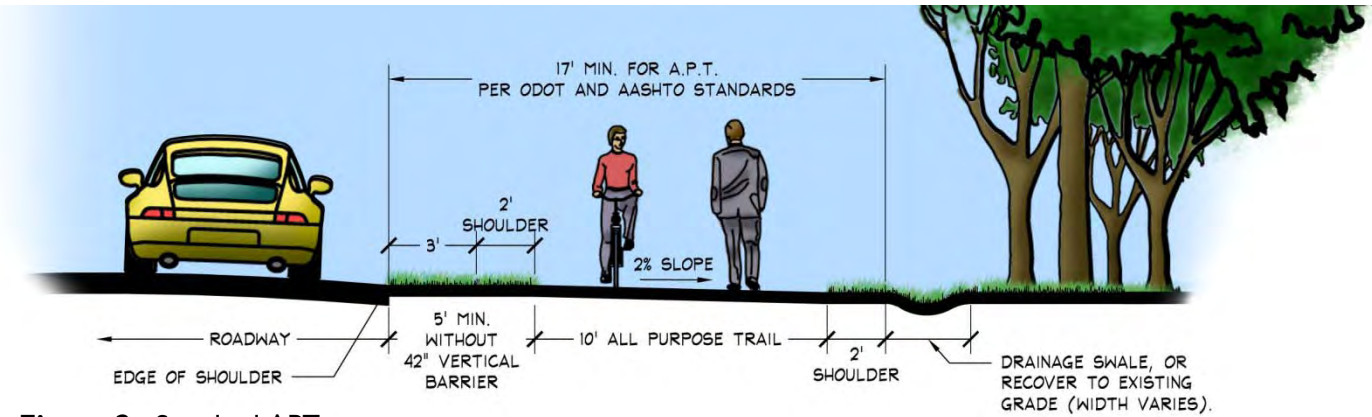


Figure 2: Standard APT

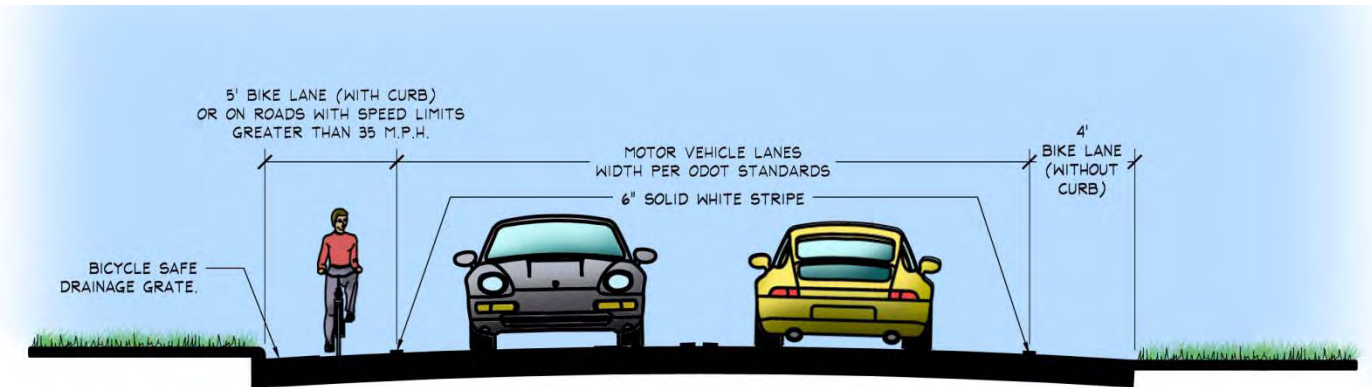


Figure 3: Standard Bike Lanes (See Figure 4 for vehicular lane widths.)

Meeting the above bridle guidelines is possible everywhere in the master plan, except on the abandoned railroad corridor. At the narrowest point along the corridor, the arrangement shown in Figure 5 will fit.

ODOT Design Exceptions

Where existing conditions prevent the design from meeting all standards, the owner can submit a formal written Design Exception Request, with justification for not meeting the standards.

A formal written Design Exception Request is required for the following conditions: APT width, bike lane width, bridge width, horizontal alignment (curve radius), grades, inadequate horizontal clearance (including lack of barrier or distance between a shared use path and a roadway), and inadequate vertical clearance.

1. Any AT facility development within the Right-of-Way of a State of Ohio road must abide by ODOT and AASHTO standards, regardless of the location or funding source. Refer to Exhibit 39 for road jurisdiction.
2. All projects in a Geauga County ROW typically are required to meet ODOT and AASHTO standards, regardless of the funding source. The Geauga County Engineer informed the consultant that NOACA has allowed some exceptions on past projects.
3. All projects in a Cuyahoga County ROW are under the design jurisdiction of the local municipality, unless the AT facility is part of a capital improvement within the Right-of-Way, involving federal dollars.
4. AT projects on local roads must meet only the local municipality's design requirements.

For non-standard designs, the consultant recommends a minimum APT width of 8'. Less than 8' for two-way traffic is likely to create a hazardous condition.



URBAN ROADWAY CRITERIA LANE & SHOULDER WIDTHS ^(A)	301-4E
	REFERENCE SECTIONS 301.1.2, 301.2.2, 301.2.3 & 304.2.2

Functional Classification	Locale	Lane Width (ft.)		Minimum Curbed Shoulder Width (ft.) (G)	
		Min.	Pref'd	w/o Parking Lane	with Parking Lane (F)
Interstate, Other Freeways and Expressways	All	12	12	12 Rt. Paved (I) 4 Med. Paved (D)	
Arterial Streets	50 mph or more	12	12	10 Each Side Paved (E) (H)	
	Less than 50 mph	11 (B)	12	1-2 Paved	10-12 Paved
Collector Streets (J)	Commercial / Industrial	11	12	1-2 Paved	8 - 11 Paved
	Residential	11	12	1-2 Paved	7 - 8 Paved
Local Streets (J)	Commercial / Industrial	11	12	1-2 Paved	8 Paved
	Residential	10 (C)	11	1-2 Paved	7 Paved

- NOTES:**
- (A) Use rural criteria (**Figures 301-2 or 301-3**) for uncurbed shoulders. Rural functional classification should be determined after checking the urban route extension into a rural area.
 - (B) On all Federal Aid Primary (FAP) roadways at least one 12 ft. lane in each direction is required. FAP listings may be obtained from **Office of Technical Services' Roadway Inventory** reports.
 - (C) Lane width may be 9 ft. where right-of-way is limited and current ADT is less than 250.
 - (D) Use 10 ft. median shoulder on facilities with 6 or more lanes. Use 12 ft. median shoulder on facilities with 6 or more lanes and when truck traffic exceeds 250 DDHV
 - (E) May be reduced to 8 ft. if DHV is less than 250.
 - (F) Use minimum lane width if, in the foreseeable future, the parking lane will be used for through traffic during peak hours or continuously.
 - (G) See **Sections 305.3.2 and 305.3.3** for use of curbs and notes on curb/guardrail relationships.
 - (H) The median and right shoulder width for divided arterials shall follow the median criteria for Interstates, other Freeways and Expressways.
 - (I) May be reduced to 10 ft. if the truck traffic is less than 250 DDHV.
 - (J) The AASHTO Publication – Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400) may be used for the design criteria of Collector and Local Streets with ADT's of 400 or less.

Figure 4: ODOT Urban Roadway Criteria (Refer to Figure 38 for study area road classifications.)

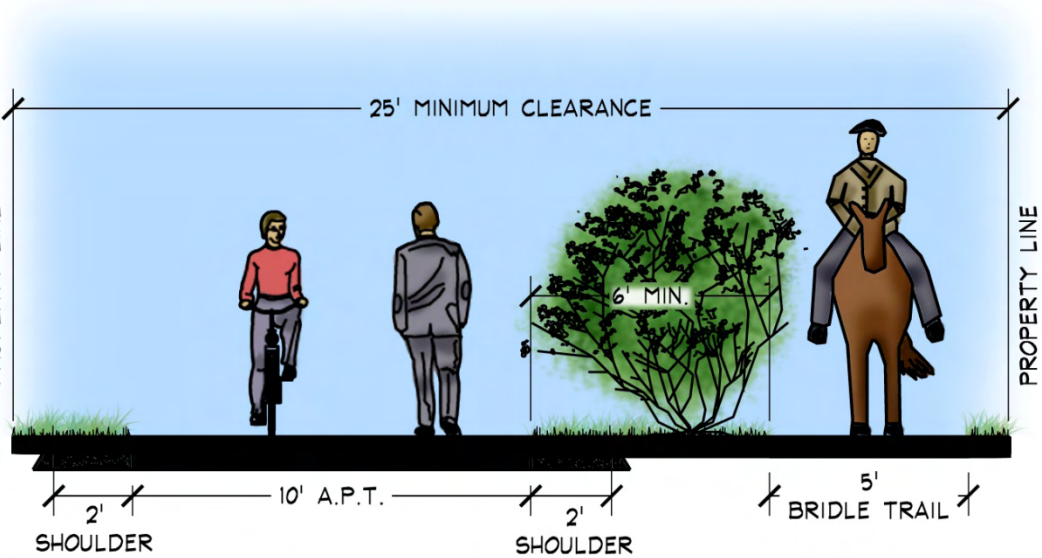


Figure 5: APT with Bridle Trail

Sight Distances
 In order for in-line skaters and cyclists to have a chance to see and react to the unexpected, an APT should have adequate sight stopping distances. Sight distances apply not only to horizontal and vertical curves, but also visual obstructions at intersections. APT design must consider intersections with roads, other APT's, and driveways.

Signage and Pavement Markings
 Route marker and directional signage should be simple and clear, for the benefit of the user and to raise vehicular drivers' awareness of the possible presence of cyclists. Locate signs periodically along the route, at key intersections, and all changes in direction.

Pavement markings are used to assign right-of-way of one corridor over others (e.g., bike lanes,) to direct cyclists safely past door zones (e.g., Sharrows,) and to raise vehicular drivers' awareness of the possible presence of cyclists.



Materials

A variety of materials provides options for surfacing an APT, based on the owner's priorities, needs, and user groups.

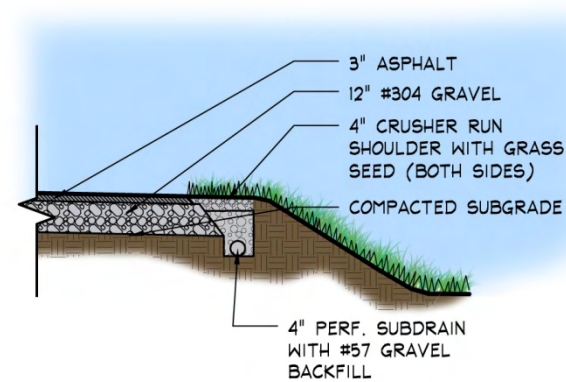


Figure 6: Asphalt APT Detail

Asphalt

- Smooth, hard surface
- Lasts up to 20 years, if installed properly
- Life can be extended with regular crack sealing
- Can be plowed in winter
- Dark color holds heat from sun, which creates a heat island effect in the summer, and melts snow and ice quickly in the winter/early spring.
- Common building material for supply and installation
- Runoff pollution an issue immediately after installation
- Moderate to moderately-high cost. (Order of magnitude cost: \$3.50/square foot. This includes materials and installation for the immediate path only, not related costs, such as utilities, moving obstructions, etc.)
- Preferred by cyclists, in-line skaters, and some walkers
- Users can move at high speeds
- Impervious

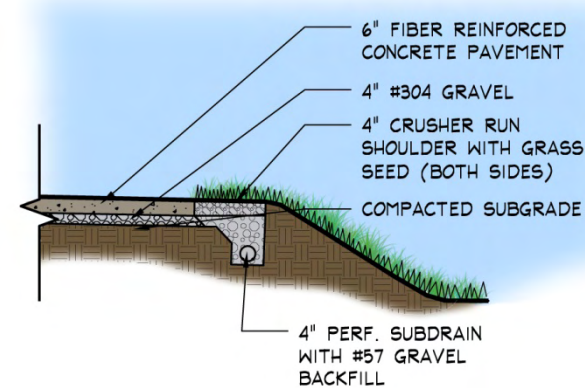


Figure 7: Concrete APT Detail

Concrete

- Hard surface. Smooth, if control joints are saw cut or if tooled joints are broom finished.
- Lasts up to 20 years if installed properly.
- Can be plowed in winter
- Light color reflects sunlight
- Common building material for supply and installation
- Moderately-high cost
- Preferred by cyclists, in-line skaters, and some walkers
- Users can move at high speeds
- Impervious

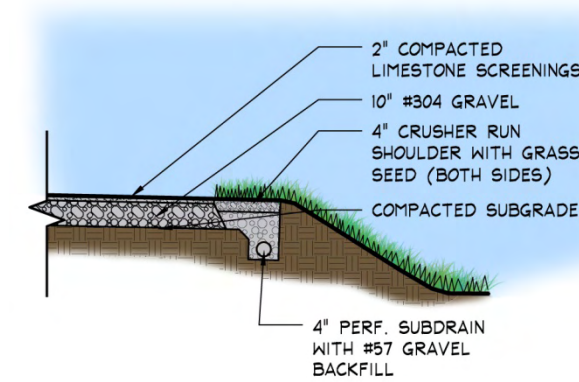


Figure 8: Limestone Screenings APT Detail

Limestone Screenings

- Softer, more giving surface
- Lasts indefinitely, with annual regrading and new topdressing of screenings every few years
- Can be plowed in winter only with raised blade
- Light color reflects sunlight
- Common building supply
- Easy to install
- Low cost
- Preferred by runners and some walkers
- Users tend to move at slower speeds
- Pervious
- Can be messy, when wet
- Ready for use after winter thaw less quickly than asphalt or concrete

Sources

This study has utilized the following sources for standards information:

- AASHTO Guide for the Development of Bicycle Facilities, 1999.
- ODOT Design Guidelines for Bicycle Facilities.
- ODOT Location & Design Manual Volumes I & 2, July 17, 2009.
- Ohio Manual of Uniform Traffic Control Devices, 2005.
- ODOT Design Guidance for Independent Bicycle Facilities, 2005.
- ODOT Design Guidance for Roadway-Based Bicycle Facilities, 2005.
- Cuyahoga County Engineer's Office
- Geauga County Engineer's Office



Plan Development

While there are opportunities in the study area for some AT routes outside of a road Right-of-Way, the majority of proposed routes will run within existing roads' Rights-of-Way. In order to determine the most appropriate facilities along these routes, the planning team developed a methodical evaluation and decision-making process to arrive at the preliminary concept plan, and following citizen input, the master plan. Figure 9, below, illustrates this process.

- NOTE:
- 1. In the interest of a successful study, one goal of the study has been to only propose AT facility routes which require no private property acquisition.
 - 2. Throughout the process, care was taken to minimize changes between facility types, to maximize end-user safety and comfort.

Step 1: APT Suitability
With APT's viewed as the most desirable AT facility, The process started with evaluating where there was room for the minimum standard APT corridor to fit between the edge of the road and the ROW line.

Where there was room along a road segment, the significance of all obstacles within the ROW was analyzed. If the planning team determined it was feasible to manage the obstacles, or if there was high public interest in an APT, that segment received an APT recommendation.

If an APT was not feasible or desirable for a road segment, the consultant proceeded to Step 2.

Step 2: Bike Lane Suitability
This step started with determining if there was room for bike lanes within the ROW.

If there was room, the consultant examined how a proposed bike lane would affect the Level of Service for that road segment, based on the Bicycle Compatibility Index (BCI.) The BCI is a rating scale developed by the Federal Highway Association, to determine the ability of a road to accommodate both motorists and bicyclists, or a road's "bicycle-friendliness." It takes into consideration the presence or lack of existing bike lanes, the width of the bike lanes, the width of the curb lane, the number of vehicles traveling in the curb lane, the typical motorist speed, the presence or lack of on-street parking, and the type of land use on the street. See Appendix 'E' for detailed BCI information.

If the addition of a bike lane to the road segment moved the BCI level of service into between Moderately High and Extremely High, the planning team checked for an existing sidewalk.

One of the planning team's standards for the study was to extend bike lanes (at a minimum, if not an APT,) to existing sidewalks in Chagrin Falls, to enable younger cyclists to reach their destination without being forced onto the open road. It stands to reason a more experienced cyclist will be comfortable on a signed, shared roadway. Meeting this standard was the last step in the process.

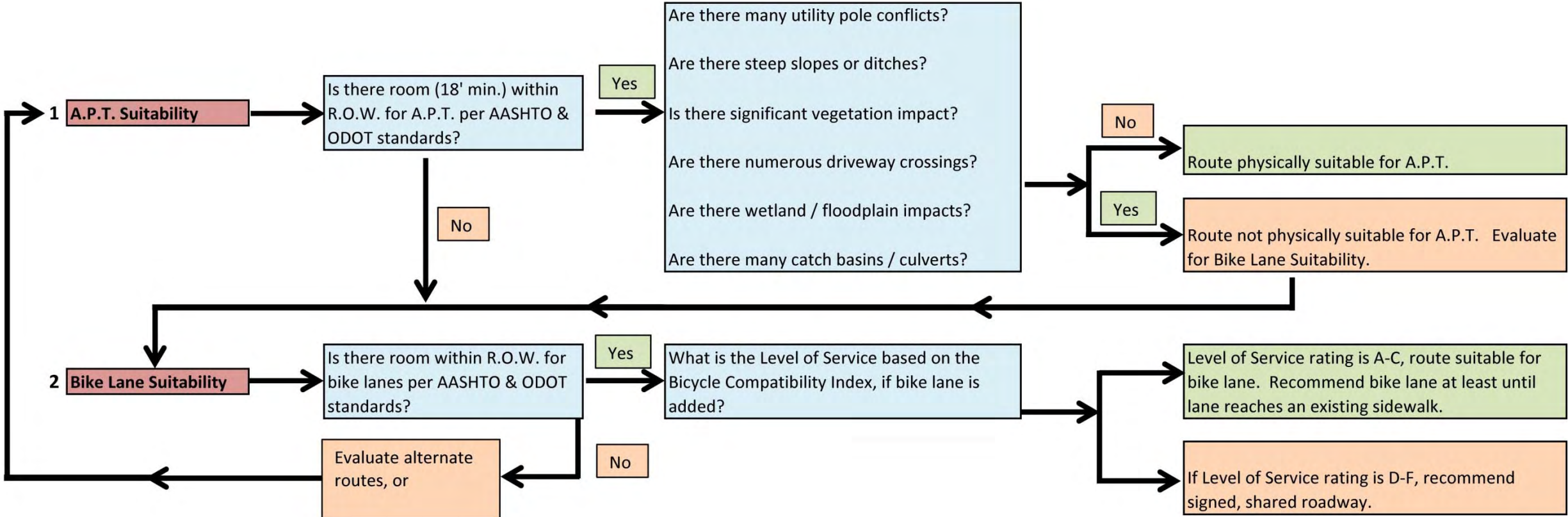


Figure 9: AT Route Determination Process



Master Plan

From all of the steps described before this section, the master plan in Figure 10 evolved. Figures 16-18, on the following pages, provide enlarged views of the plan, with more detail. Figure 11 labels the route segments, which relate to tables throughout the report.

The plan recommends two route segments which will require permission from and approval by non-governmental owners:

1. **First Energy corridor:** A series of conversations between the planning team and First Energy resulted in a verbal “No Exceptions Taken” response from First Energy, regarding the plan to locate an APT and bridle trail in its corridor. In order for First Energy to allow the concept to move forward, the local entity responsible for funding the trails will have to provide the following, in addition to other First Energy requirements:
 - a. Written permission from the Whitetail Run Community to build the trails through its property.
 - b. Preliminary engineering drawings depicting the horizontal and vertical alignments of the proposed trails.
 - c. Written understanding that the sponsor will have to pay for moving the trail in the future, should First Energy need it moved for facility improvements.
2. **Beech Brook connector:** Beech Brook was receptive to the concept of an APT along the southern edge of its property, between Lander Road and the Orange School District campus. In order to determine if Beech Brook will permit the facility’s construction, though, the Board of Directors requires preliminary engineering data,

to better understand how an APT will impact existing vegetation, fencing, slopes, and fire lanes.

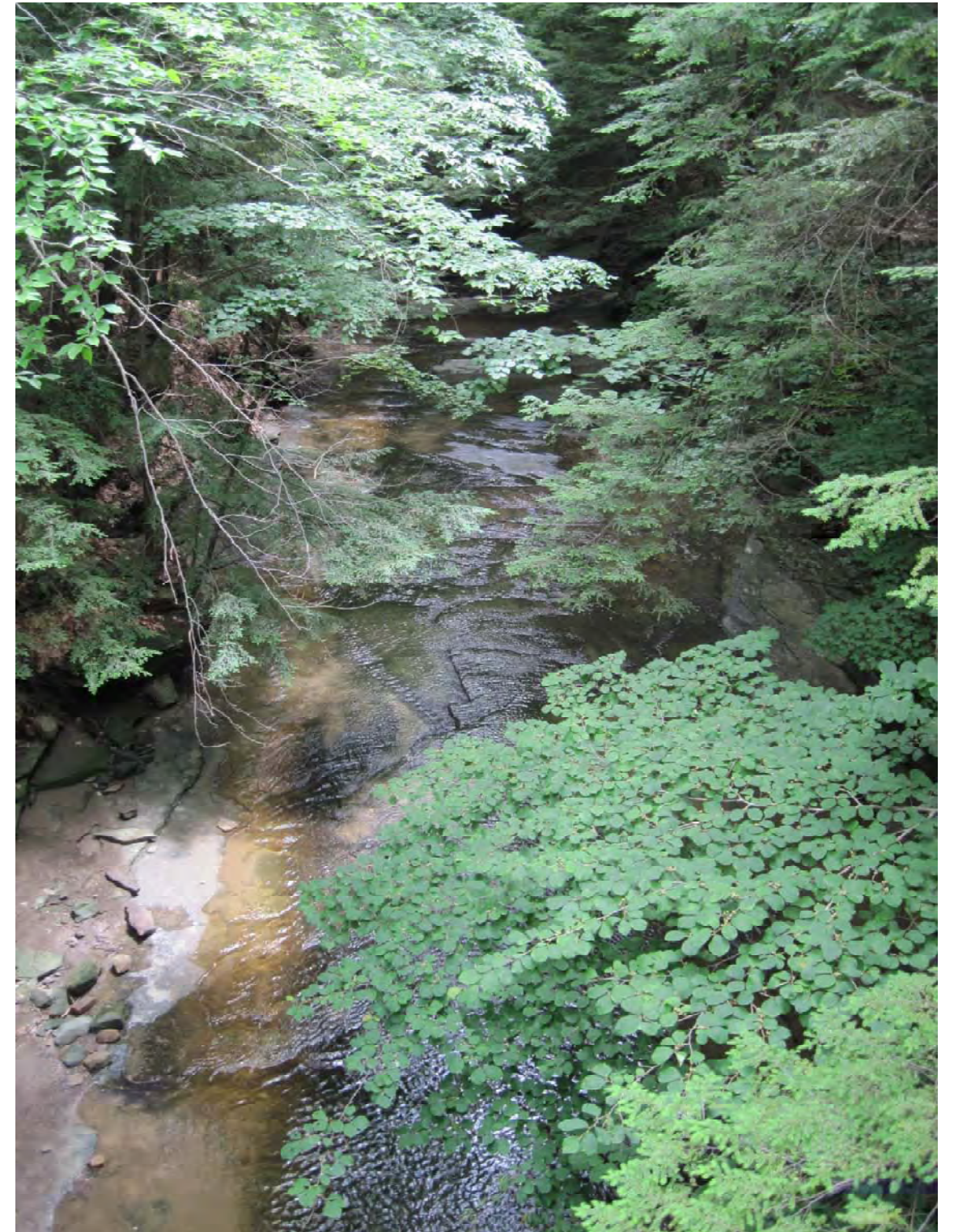
Bridge Modifications

A number of routes encounter existing bridges, which will have to be modified or added to, in order to traverse waterways safely. See Appendix F for proposed options.

Comparison to NOACA Priority Roadways

Per TLCI funding requirements, NOACA’s Regional Bicycle Transportation Plan’s priority roadways must be overlaid on the proposed master plan, as shown in Figure 16. Justification must be provided if the plan does not call for a route on one of the priority roadways. The master plan differs from NOACA’s plan on two roads for the following reasons:

1. **SOM Center (Route 91):** Through the course of the study, the planning team concluded SOM Center’s high traffic volume and speed creates an unsafe and undesirable AT route. It also connects very few destinations within the study area, and the proposed parallel Lander Road APT can serve the same north-south function.
2. **Chillicothe Road (Rt. 306):** Chillicothe has the second highest volume of traffic, after SOM Center, and motorists also drive at high speeds on it. The planning team determined it is an undesirable road to locate an AT facility on, if it can be avoided. This reasoning explains the recommendation for bike lanes on Music Street as the primary route to the West Woods instead of the alternate route on Route 306.



Chagrin River Tributary



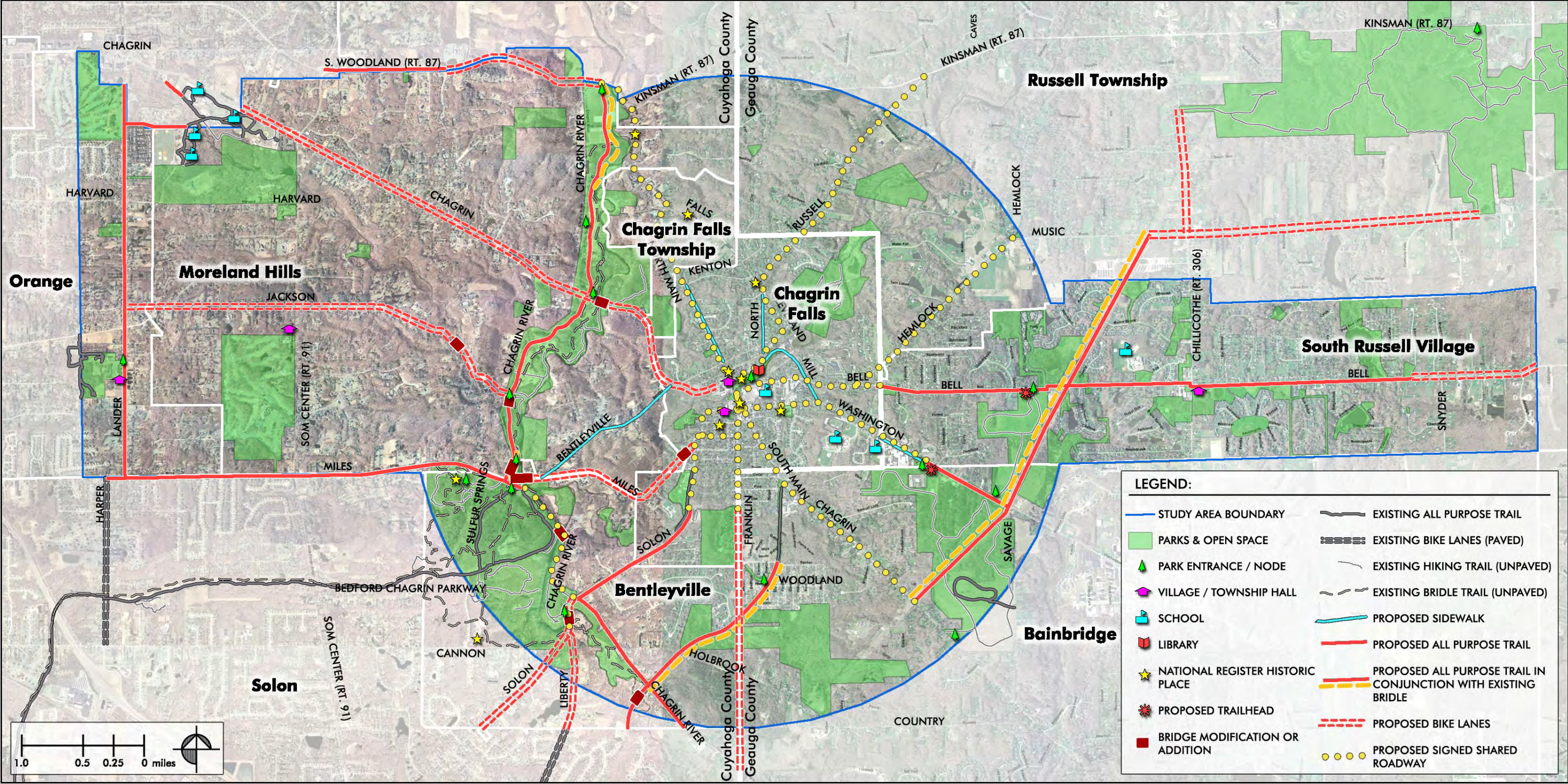


Figure 10: Chagrin Falls Region Alternative Transportation Study Master Plan
(To view the proposed routes in a table format, see Figure 25.)



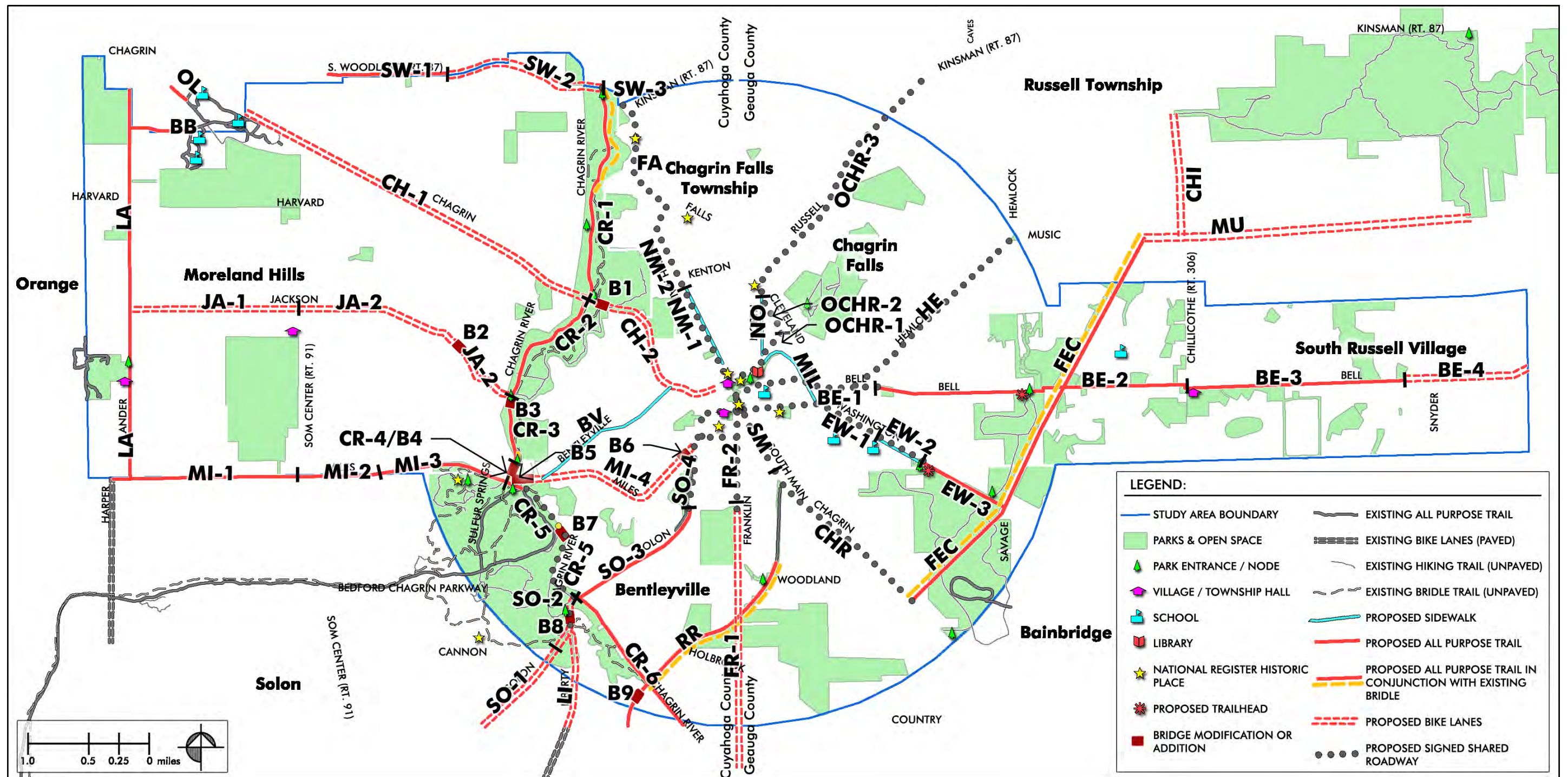
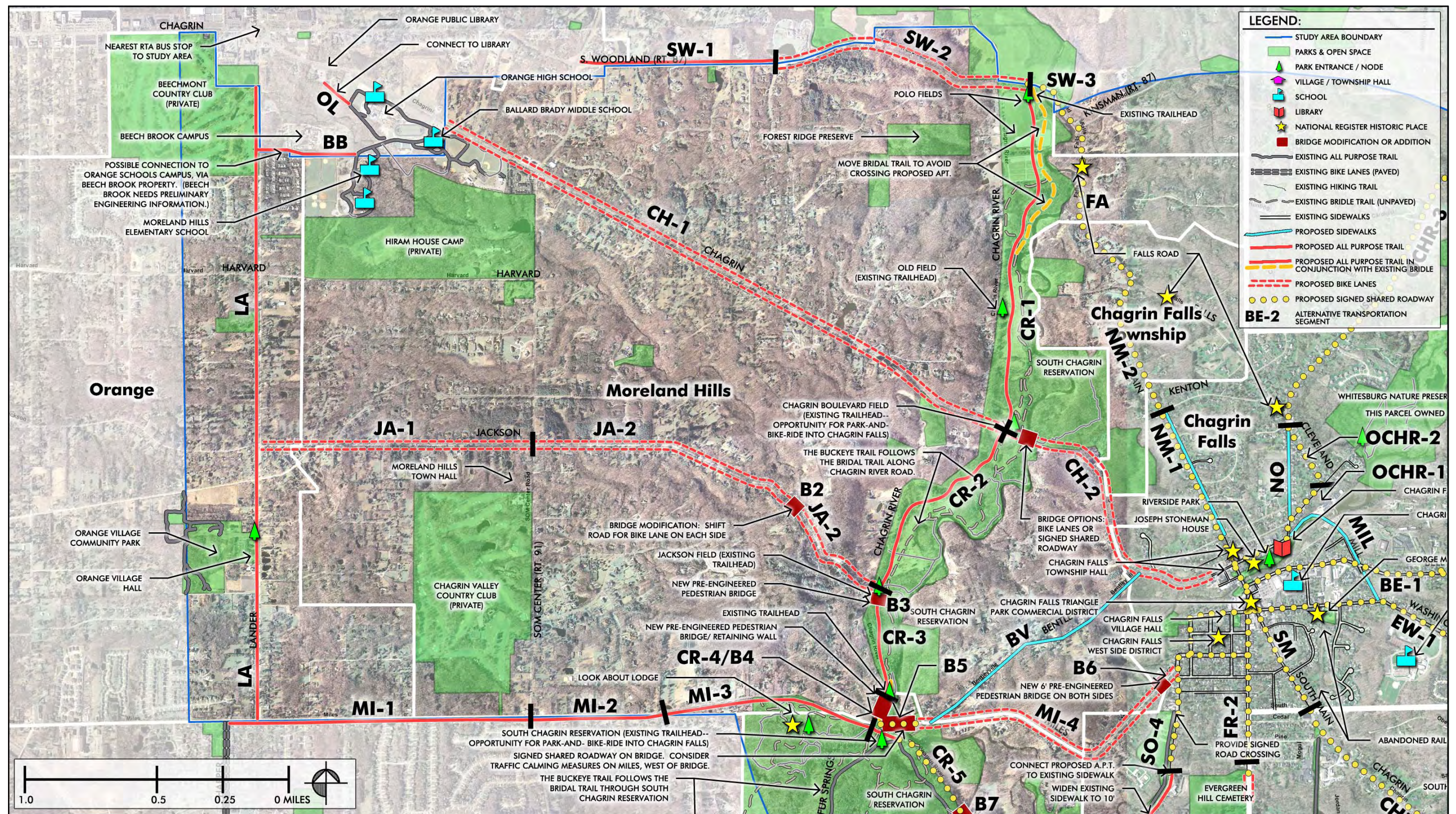


Figure 11: Master Plan Route Segments





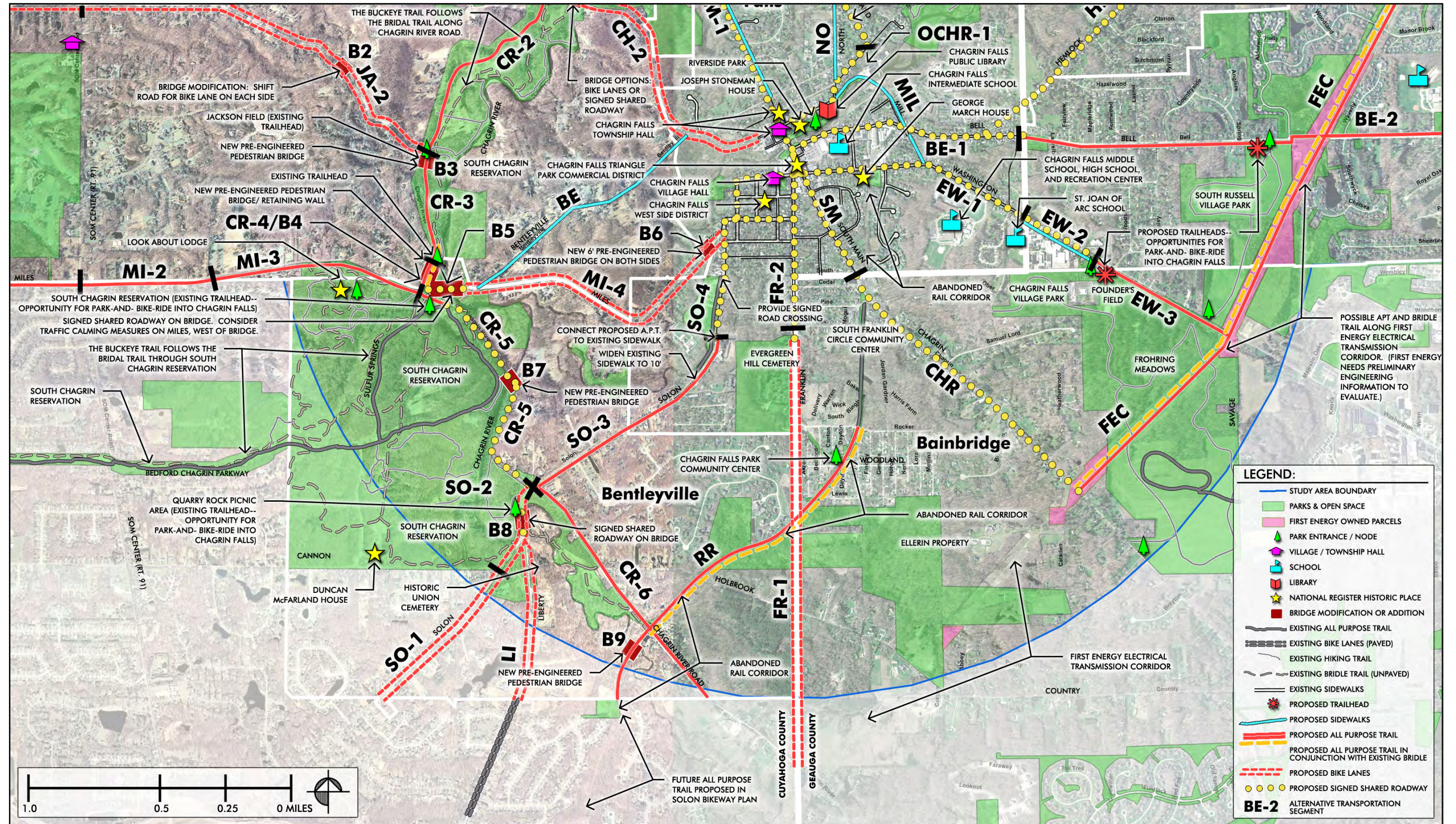


Figure 14: Master Plan Enlargement--SOUTH





Figure 15: Recommended Bicycle Parking & Bike Station Locations

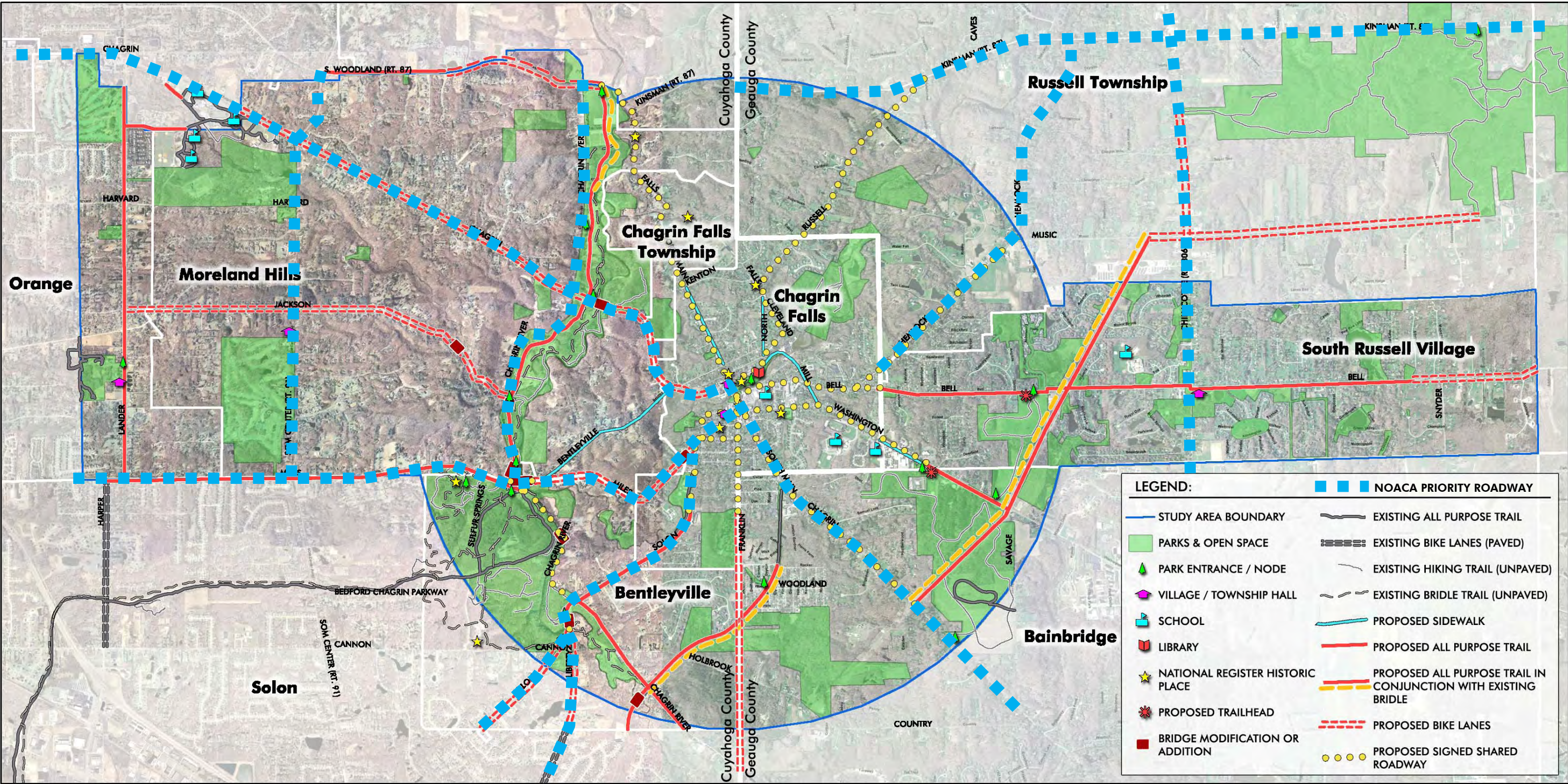


Figure 16: Master Plan Comparison with NOACA Priority Roadways
(Priority Roadways labeled with blue dashed lines.)



Recommendations

The Chagrin Falls Alternative Transportation Study is an exciting step towards further polishing one of Greater Cleveland's regional jewels, the Chagrin River Valley.

Facility Development

To ensure all user groups benefit from the plan, the planning team studied user group/AT facility relationships, and concluded the following:

1. Pedestrians, family cyclists, and low -skill level cyclists are best served by APT's.
2. Moderate-skill level cyclists are comfortable in bike lanes.
3. Experienced cyclists are comfortable on most roads, but would benefit from signed shared roadways.

With these three categories and all existing conditions, public input, and analysis in mind, the planning team developed a prioritized list of [Recommendations 1-37](#) for AT facility development, as is shown in Figures 19-24 on the following pages.

Refer to the Master Plan Enlargements, Figures 16-18, for details.

Trail Heads

Downtown Chagrin Falls' tight urban layout contributes to its charm, but results in parking shortages during special events.

[Recommendation #38:](#) Develop a trail head at Founder's Field and/or South Russell Village Park to relieve vehicular parking pressure in downtown, with the trail heads acting as "Alternative Park and Rides." Assuming the AT facilities between the trail heads and downtown were installed, visitors could park and ride their bicycles to the event.

A number of Cleveland Metropark trail heads already exist along Chagrin River Road, and could serve the

same purpose, assuming the connecting facilities were installed.

Bicycle Parking

The downtown area is deficient in organized bicycle parking. With many cyclists already streaming through and the potential for more, after facilities to downtown are built, bike racks will help control where bicycles are parked, and reduce the potential for parked bikes creating tripping hazards, obstacles to pedestrian flow, and visual clutter.

[Recommendation #39:](#) Install bike racks at locations shown in Figure 19.

Riverside Park is not only a logical place for bicycle parking, it is also a good location for a bike station. [Recommendation #40:](#) Develop a bike station that provides drinking water, bicycle storage, local AT information, and a maintenance shop (or directions to the nearest local maintenance shop.)

Signage & Pavement Markings

It is not surprising, according to the bicycle accident data in Figure 36, that the majority of reported bicycle accidents within the study area over the past 10 years has occurred in downtown Chagrin Falls.

[Recommendation #41:](#) Develop and install a clear wayfinding signage, safety signage, and pavement marking program in the downtown area, and throughout the study area.

1. With the high volume of vehicular and bicycle traffic in the downtown area, there is a great need to provide signage and pavement markings to help cyclists navigate the roads safely, and to raise the awareness of motorists to the presence of cyclists. Install sharrow pavement markings along all sections of shared signed roadways that pass on-street parallel parking spaces.

2. Since the downtown area is very busy visually, and the study area is large, a custom route wayfinding sign that is simple and distinctive will guide AT users.
3. All study area municipalities should also view the design of the wayfinding sign as a marketing opportunity to define the region as AT-friendly, and to reinforce positive perceptions of the area.

Education

The education of all ages of motorists and non-motorists, regarding the rights and responsibilities of both groups, is an important component to establishing alternative transportation in the region. Fortunately, several educational efforts are already underway for elementary, middle, and high school ages:

Chagrin Falls Safe Routes to School Team (CFSRTST)

This highly motivated team has implemented or been involved in a number of programs to inform students and the community about safe walking and cycling. The programs include:

1. Local advertisements to raise awareness of start of the school year, safety issues, clearing snow from sidewalks, and other messages,
2. School assemblies and skits to present safety information,
3. Flyers with safe walking tips and route maps
4. Parent night presentations,
5. Inviting the Ohio City Bicycle Co-Op to run a bicycle education class in the classroom and via a bike rodeo, and
6. Developing a class for teenage drivers that focuses on pedestrian safety.



Bike Station in Long Beach, California



- Chagrin Falls Police Department**
 The department has worked closely with CFSRTST in the development and presentation of a number of the programs, and has run an annual bicycle rodeo.

There are many opportunities for pedestrian and bicycle instruction for Chagrin Falls children, but the classes should be extended to the entire study area, and more adult educational programs should be implemented.

Recommendation #42: Extend current programs beyond Chagrin Falls schools to all youth in the region.

Recommendation #43: Develop adult bicycle and pedestrian classes through the recreation or police department(s), or a local bicycling club.

Recommendation #44: Educate adult motorists about the rights and responsibilities of bicyclists and pedestrians through public safety brochures and traffic school curricula.

Encouragement

CFSRTST and the police department have been involved with events that support alternative transportation, such as Walk to School Day and Community Safety Day.

Recommendation #45: Promote additional encouragement events, such as Bike to Work Week, every May. Also, local retailers could increase non-motorized errands by rewarding pedestrian and cyclist shoppers with coupons.

- Historic Sites and Natural Features**
 The study area, particularly in and around the Village of Chagrin Falls, is steeped in interesting historic sites and noteworthy natural features.

Recommendation #46: Develop an AT circuit, as shown in Figure 25, to educate participants about local history and natural features. Interpretive signage, overlooks, and recorded, self-guided tours (perhaps available for pick up at the bike station,) could tell stories about the

early settlers of the Western Reserve, the flour, wool, and paper industries, the interurban railway, local geology, and current watershed conservation efforts.

Enforcement

Proposed and existing laws which protect the safety of motorists and non-motorists should be enacted and enforced.

Recommendation #47: Enact local legislation which prohibits texting while driving a motor vehicle.

Recommendation #48: Enforce existing vehicular laws more aggressively, for motorists, cyclists, and pedestrians.

- Traffic Calming Measures**
Recommendation #49: In areas where vehicular speed creates a safety or comfort issue for AT users, consider implementing physical changes to the roadway that cause motorists to slow down. Figure 17 shows some examples of narrowing roadways, changing road surface textures and/or elevations, and modifying traffic patterns to slow traffic.



Figure 17: Examples of Traffic Calming Measures



• **Non-Cyclist Use of Bike Lanes**

The question of non-cyclists’ right to use bike lanes arose during the study. The pedestrian laws from the Ohio Revised Code do not address this issue directly:

“Where a sidewalk is provided and its use is practicable, pedestrians shall not walk along or upon the adjacent roadway. Where a sidewalk is not available, pedestrians walking along and upon a highway shall walk only on a shoulder, as far as practicable from the edge of the roadway. Where neither sidewalk nor shoulder is available, pedestrians shall walk as near to the outside edge of the roadway and only on the left side of the roadway, facing traffic. Any pedestrian upon a roadway shall yield the right-of-way to all vehicles upon the roadway.”

The consultant spoke with several county and municipal officials about pedestrians’ use of bike lanes, and concluded each municipality is responsible for determining what and how to enforce.

Maintenance

Recommendation #50: When a municipality or other entity moves forward with AT facility engineering and construction document preparation, evaluate not only the cost of construction, but the project's full life cycle cost, to ensure adequate funds are set aside for regular maintenance. Maintenance includes, but is not limited to repainting pavement markings, crack sealing or repaving asphalt surfaces, regrading and topdressing limestone screenings surfaces, replacing damaged signage, vegetation management, and snow removal.

Figure 40 shows the results from a maintenance and operation costs survey for 100 trails.



Bike Route Signage Along Harper Road

ITEM	OVERALL	ASPHALT	NON-ASPHALT
Number of Trails Reporting Financials	39	18	19
Average Annual M&O Cost	\$24,239	\$19,584	\$25,237
Average Length (miles)	23	20	24
M&O Cost per Mile		\$1,458	\$1,478
Average Years Open	12	15	11
Average Annual Users	136,986	139,304	129,492
Re-grade/Re-surface Frequency		17	9

Figure 18: APT Maintenance and Operations Costs from Survey of 100 Trails. (“Rail-Trail Maintenance & Operation”, Rails-to-Trails Conservancy Northeast Regional Office, Tim Poole, July 2005.)



Recommendations—High Priority

User Group: PEDESTRIANS, FAMILY CYCLISTS, and LOW SKILL LEVEL CYCLISTS						Municipality										
Action	Segment	Construction Cost	Soft Cost	Total Project Cost	Reason(s)/Comments	BAINBRIDGE	BENTLEYVILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	OLON	S. RUSSELL VILLAGE
1	Bell Street APT--Chagrin Falls line to Route 306	BE-2	\$ 2,448,000	\$ 856,800	\$ 3,304,800	High public interest										Y
		BE-3	\$ 1,716,000	\$ 600,600	\$ 2,316,600	Connect S.R.V. children with schools										Y
2	Chagrin River Road APT	CR-1	\$ 1,656,000	\$ 579,600	\$ 2,235,600	Extend Metroparks network						Y				
		CR-2	\$ 1,080,000	\$ 378,000	\$ 1,458,000	Highly desirable greenway						Y				
		CR-3	\$ 698,000	\$ 244,300	\$ 942,300	Used by local and regional residents						Y				
		CR-4	\$ 975,000	\$ 341,250	\$ 1,316,250			Y			Y					
		CR-5	\$ 478,500	\$ 167,475	\$ 645,975			Y								
		CR-6	\$ 1,296,000	\$ 453,600	\$ 1,749,600			Y								
3	North Main sidewalk	NM-1	\$ 120,000	\$ 24,000	\$ 144,000	Connect students to CFEVS campus			Y							
4	North Street sidewalk	NO	\$ 72,000	\$ 14,400	\$ 86,400	Connect students to CFEVS campus			Y							
5	Mill Street sidewalk	MIL	\$ 973,500	\$ 194,700	\$ 1,168,200	Connect students to CFEVS campus			Y							
6	Lander Road APT, incl. Beech Brook connection	LA & BB	\$ 2,800,000	\$ 980,000	\$ 3,780,000	Strong N-S Orange Village conduit and connection to Orange Schools					Y	Y	Y			
7	Solon Road APT--Chagrin River Road to existing Chagrin Falls sidewalks	SO-3	\$ 1,176,000	\$ 411,600	\$ 1,587,600	Connect Chagrin Valley Trails housing & Solon to CF and CFEVS campus		Y	Y							
User Group: MID LEVEL CYCLIST																
8	Chagrin Boulevard bike lanes	CH-1	\$ 1,482,000	\$ 444,600	\$ 1,926,600	Close gap between C.F. and Shaker Blvd. APT						Y				
		CH-2	\$ 1,180,200	\$ 354,060	\$ 1,534,260				Y	Y		Y				
9	Liberty Road bike lanes	LI	\$ 128,000	\$ 38,400	\$ 166,400	Connect to existing Liberty Rd. bike lanes in Solon		Y								
10	Miles Rd. bike lanes--Chagrin River Road to CF	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Popular conduit between CF and South Chagrin Reservation		Y	Y			Y				
11	Solon Road bike lanes	SO-2	\$ 231,250	\$ 80,938	\$ 312,188	Connect Chagrin Valley Trails development and Solon to CF and CFEVS campus		Y								
		SO-1	\$ 345,938	\$ 103,781	\$ 449,719			Y								
User Group: EXPERIENCED CYCLIST																
12	Bell Street SSR into Chagrin Falls	BE-1	\$ 18,600	\$ 2,790	\$ 21,390	Connect Bell St. APT to CF and students to CFEVS campus			Y							

Figure 19: Recommendations—High Priority
(See Figure 11 for Route Segment Labels)



Recommendations—High Priority

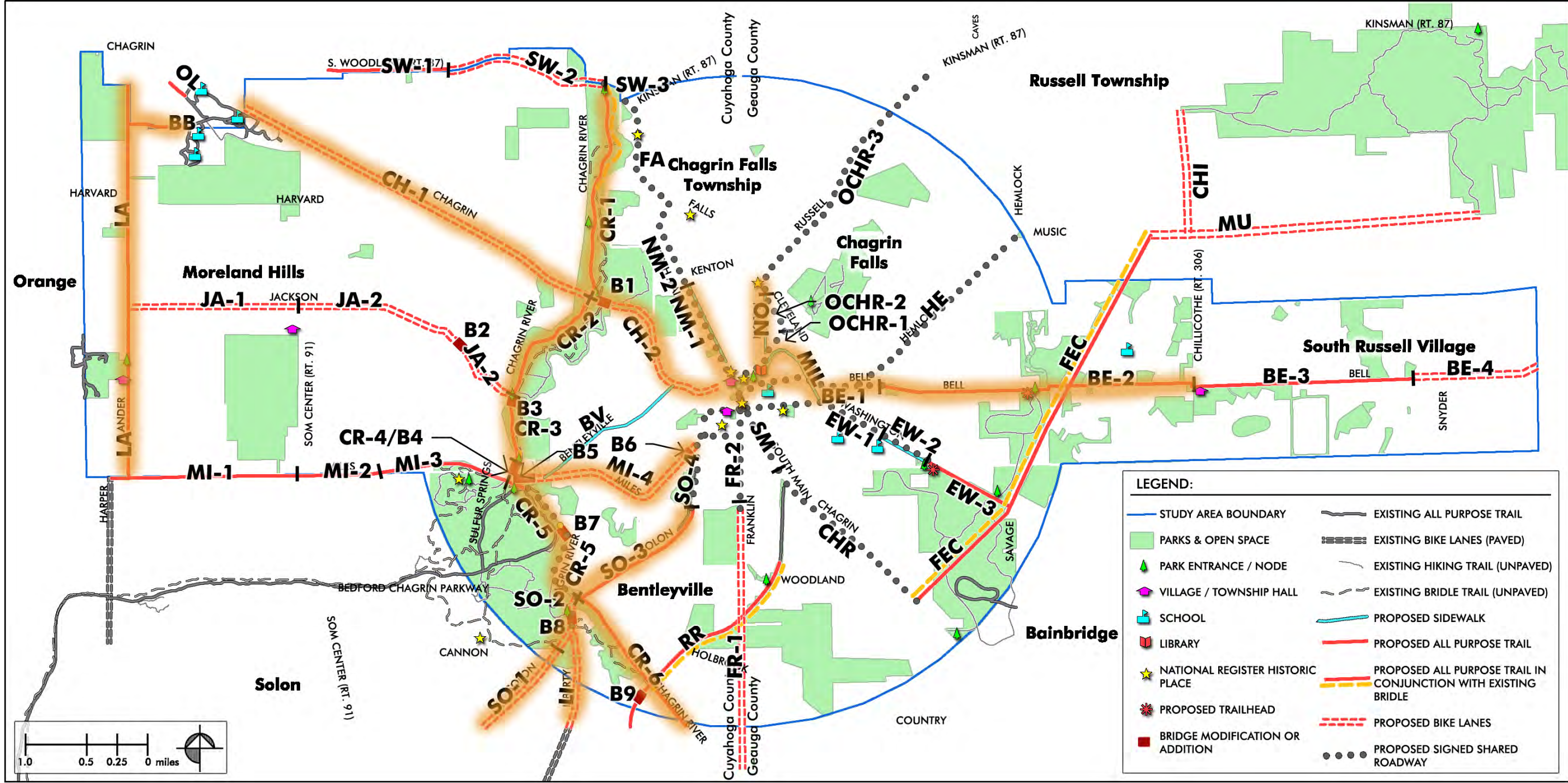


Figure 20: High Priority Recommendations Plan



Recommendations—Medium Priority

User Group: PEDESTRIANS, FAMILY CYCLISTS, and LOW SKILL LEVEL CYCLISTS						Municipality										
						BAINBRIDGE	BENTLEYVILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	OLON	S. RUSSELL VILLAGE
Action	Segments	Construction Cost	Soft Costs	Total Project Cost	Reason(s)/Comments											
13 Bell Street APT 306 to Silver Springs	BE-3	\$ 1,716,000	\$ 600,600	\$ 2,316,600	Next step in connecting SRV residents with schools and CF											Y
14 Bentleyville Road sidewalk	BV	\$ 157,500	\$ 31,500	\$ 189,000	Secondary connection between CF and South Chagrin Reservation		Y									
15 First Energy APT	FEC	\$ 1,450,000	\$ 507,500	\$ 1,957,500	Connect CF and SRV to West Woods	Y								Y		Y
16 Railroad Corridor APT	RR	\$ 1,216,000	\$ 425,600	\$ 1,641,600	Implement when Solon implements its railroad corridor APT	Y	Y									
17 East Washington APT	EW-3	\$ 618,000	\$ 216,300	\$ 834,300	Connect to First Energy corridor	Y										Y
18 East Washington Sidewalk	EW-2	\$ 73,800	\$ 22,140	\$ 95,940	Connect to First Energy corridor											Y
19 Orange Library Connector	OL	\$ 67,500	\$ 20,250	\$ 87,750	Connect to First Energy corridor								Y			
User Group: MID LEVEL CYCLIST																
20 Jackson Street bike lanes	JA-1	\$ 770,000	\$ 231,000	\$ 1,001,000	Connect suburbs west of CF to CF and Metroparks network						Y	Y				
	JA-2	\$ 1,880,000	\$ 564,000	\$ 2,444,000							Y					
21 Music Street bike lanes	MU	\$ 240,000	\$ 72,000	\$ 312,000	Connect to West Woods									Y		
User Group: EXPERIENCED CYCLIST																
22 Chagrin Road SSR--CF to First Energy corridor	CHR	\$ 6,150	\$ 923	\$ 7,073	Connect to First Energy corridor	Y										
23 East Washington SSR	EW-1 & 2	\$ 11,550	\$ 1,733	\$ 13,283	Connect to First Energy corridor			Y								Y
24 South Main SSR	SM	\$ 10,000	\$ 1,500	\$ 11,500	Connect to First Energy corridor			Y								
25 Solon Road SSR	SO-4	\$ 4,500	\$ 675	\$ 5,175	Connect to CF			Y								

Figure 21: Recommendations—Medium Priority
(See Figure 11 for Route Segment Labels)



Recommendations—Medium Priority

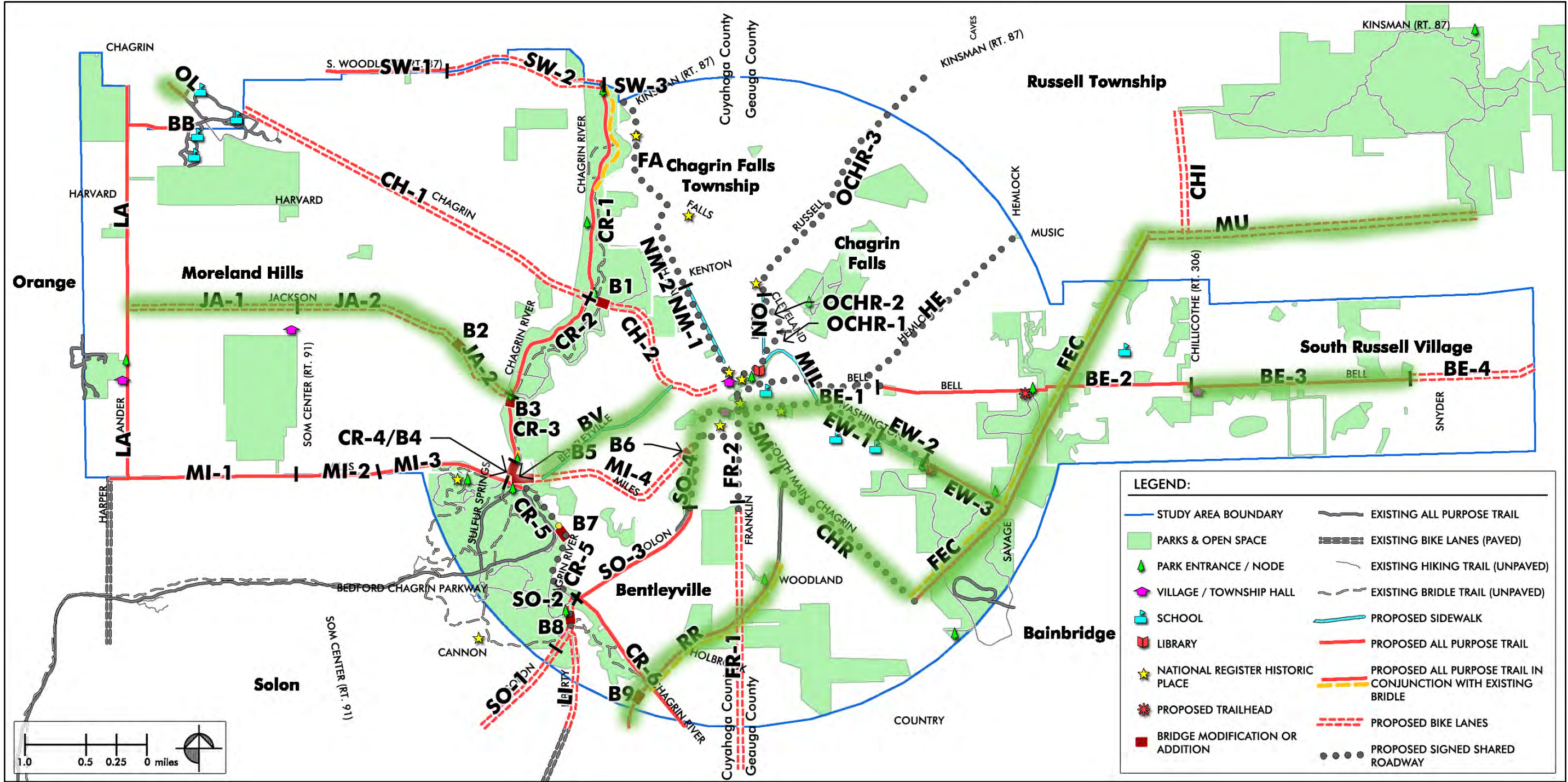


Figure 22: Medium Priority Recommendations Plan



Recommendations—Low Priority

User Group: PEDESTRIANS, FAMILY CYCLISTS, and LOW SKILL LEVEL CYCLISTS						Municipality										
						BAINBRIDGE	BENTLEYVILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	OLON	S. RUSSELL VILLAGE
Action	Segments	Construction Cost	Soft Cost	Total Project Cost	Reason(s)/Comments											
26 South Woodland APT	SW-1	\$ 987,500	\$ 345,625	\$ 1,333,125	Secondary connection between Shaker APT and CF					Y	Y		Y			
27 Miles Road APT	MI-1	\$ 1,320,000	\$ 462,000	\$ 1,782,000	Parallel route to Chagrin Reservation APT						Y	Y			Y	
	MI-2	\$ 840,000	\$ 294,000	\$ 1,134,000						Y			Y			
	MI-3	\$ 1,050,000	\$ 367,500	\$ 1,417,500			Y			Y						
User Group: MID LEVEL CYCLIST																
28 Bell Street bike lanes	BE-4	\$ 546,750	\$ 164,025	\$ 710,775	Eastern-most stretch of SRV connection to CF											Y
29 Chillicothe Road bike lanes	CHI	\$ 392,000	\$ 117,600	\$ 509,600	Only if citizens agree better option than Music St.									Y		
30 South Woodland bike lanes	SW-2	\$ 904,500	\$ 271,350	\$ 1,175,850	Secondary connection between Shaker APT and CF					Y	Y		Y			
31 Franklin Street bike lanes	FR-1	\$ 700,000	\$ 210,000	\$ 910,000	Secondary north-south connection between Solon/Bainbridge and CF	Y	Y	Y								
32 Miles Road Bike lanes--Chagrin Valley Est to CRR	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Parallel route to Chagrin Reservation APT		Y	Y			Y					
User Group: EXPERIENCED CYCLIST																
33 Falls Road SSR	FA	\$ 3,500	\$ 525	\$ 4,025	Secondary connection between Shaker APT and CF			Y	Y	Y	Y					
34 Franklin Street SSR	FR-1	\$ 7,000	\$ 1,050	\$ 8,050	Secondary north-south connection between Solon/Bainbridge and CF	Y	Y	Y								
	FR-2	\$ 14,000	\$ 2,100	\$ 16,100		Y		Y								
35 Hemlock St. SSR	HE	\$ 7,000	\$ 1,050	\$ 8,050	Secondary NE connector from CF			Y						Y		Y
36 North Main Street SSR	NM-1	\$ 4,000	\$ 600	\$ 4,600	Secondary connection between Shaker APT and CF			Y								
	NM-2	\$ 6,000	\$ 900	\$ 6,900				Y	Y							
37 Orange/N/High/Clev/Russell SSR	OCHR-1	\$ 2,350	\$ 353	\$ 2,703	Secondary NE connector from CF			Y								
	OCHR-2	\$ 1,325	\$ 199	\$ 1,524				Y								
	OCHR-3	\$ 8,950	\$ 1,343	\$ 10,293				Y						Y		

Figure 23: Recommendations—Low Priority
(See Figure 11 for Route Segment Labels)



This map illustrates the Chagrin River Watershed, highlighting proposed trails and existing infrastructure. The watershed is bounded by a blue line and is divided into several townships: Chagrin Falls, Moreland Hills, Solon, and Bentleyville. The map shows the Chagrin River and its tributaries, including the Chagrin Creek, Chagrin Run, and Chagrin Branch. Key locations include Chagrin Falls, Moreland Hills, Solon, Bentleyville, and Bainbridge. The map also shows existing parks and open spaces, such as Chagrin Falls Park, Moreland Hills Park, and Solon Park. Proposed trails are shown in red, and existing trails are shown in blue. The map includes a legend, a scale bar, and a north arrow.

LEGEND:

- STUDY AREA BOUNDARY
- PARKS & OPEN SPACE
- PARK ENTRANCE / NODE
- VILLAGE / TOWNSHIP HALL
- SCHOOL
- LIBRARY
- NATIONAL REGISTER HISTORIC PLACE
- PROPOSED TRAILHEAD
- BRIDGE MODIFICATION OR ADDITION
- EXISTING ALL PURPOSE TRAIL
- EXISTING BIKE LANES (PAVED)
- EXISTING HIKING TRAIL (UNPAVED)
- EXISTING BRIDLE TRAIL (UNPAVED)
- PROPOSED SIDEWALK
- PROPOSED ALL PURPOSE TRAIL
- PROPOSED ALL PURPOSE TRAIL IN CONJUNCTION WITH EXISTING BRIDLE
- PROPOSED BIKE LANES
- PROPOSED SIGNED SHARED ROADWAY

Recommendations

Chagrin Falls Region Alternative Transportation Study—Final Report

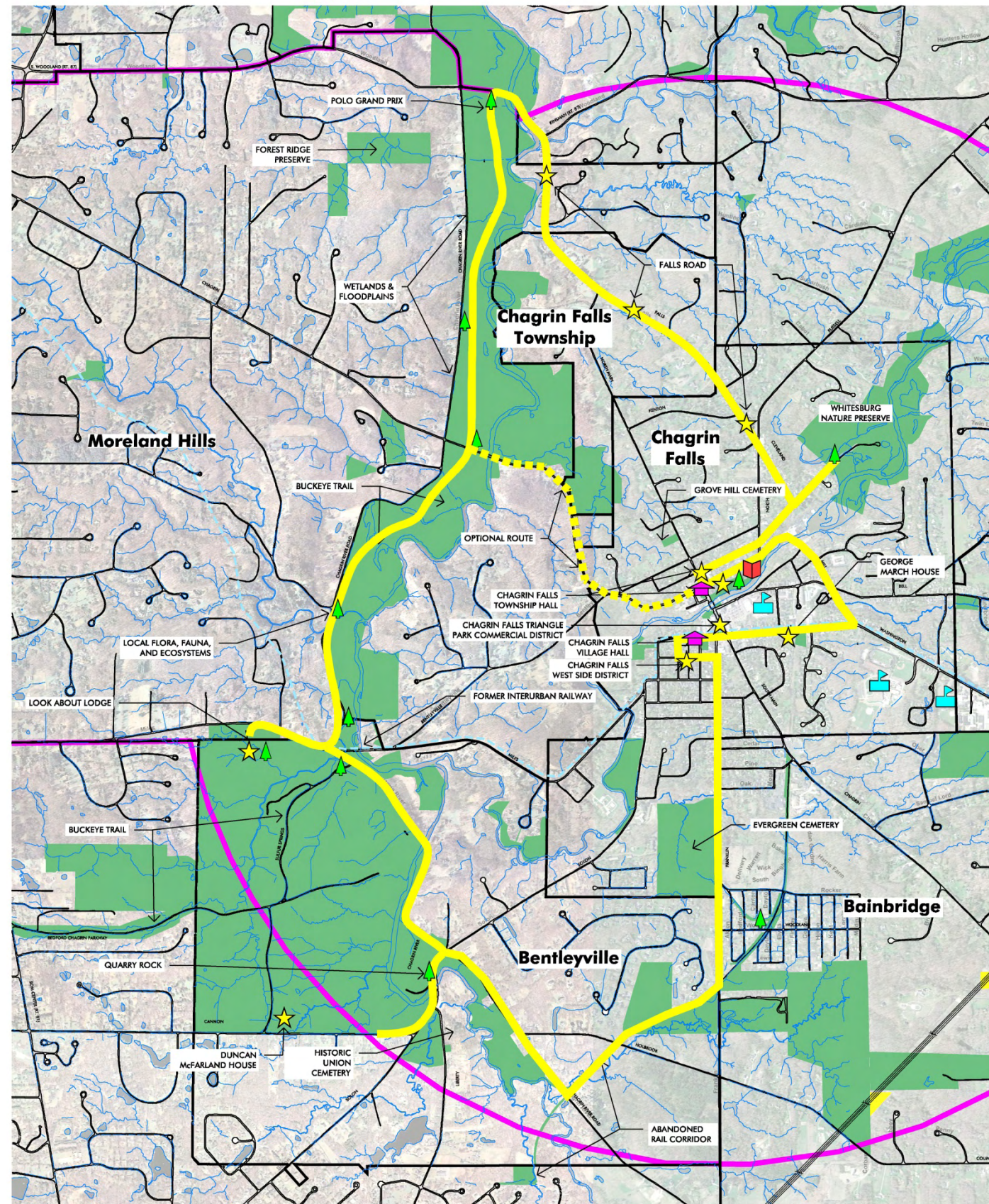


Figure 25: Historic Sites & Natural Features Circuit

Recommendations

Chagrin Falls Region Alternative Transportation Study—Final Report



Cost Estimate

This table displays detailed estimated costs for all segments of the master plan. No total cost for the master plan is shown, since many segments have several options. Subtotal costs colored green represent the recommended AT facility for each segment.

The estimate covers construction costs only. See Figures 19, 21, and 23 for estimates of soft costs, such as surveys, traffic impact studies, environmental reports, design, construction documentation, bidding, construction administration, and testing.

NOTES:

- I. The estimate assumes an asphalt surface for APT's and bike lanes.
 - a. To substitute a limestone screening surface for an asphalt APT surface:
 - i. Deduct \$25/lineal foot for a 10' ODOT path.
 - ii. Deduct \$20/lineal foot for an 8' non-ODOT path.
 - b. A 6' wide path with a limestone screening surface is estimated to cost \$40/lineal foot if no utility or major drainage work is required.
- 2. Refer to Figure 11 for segment labels.

* Cost for bridge/structure B-4 is included in APT unit cost.

** Average cost / lineal foot, according to Mill Street/Cleveland Street Pedestrian Route Report, by CT Consultants, dated July, 2010.

SEGMENT LABEL	BRIDGE LABEL	ROADWAY / ROUTE NAME	START	FINISH	LENGTH (FT)	COST/LINEAL FOOT								BRIDGE LENGTH	BRIDGE ALLOWANCE ODOT	BRIDGE ALLOWANCE NON-ODOT	SUBTOTAL COSTS (bridge costs included)				
						SIDEWALK	SIGN SHRD ROADWAY (SR)	ADD WIDTH	S. F. COST	LANES	APT ODOT 10' ASPH PATH 2' SHOULDERS	APT 8' WIDE NON- ODOT	SIDEWALK				ROUTE	LANE	APT HIGH	APT LOW	
BB		Beech Brook	Lander Road	Orange School Campus	2,000						\$ 200	\$ 125								\$ 400,000	\$ 250,000
BE-1		Bell Street	Main Street	Chagrin Falls line	4,650		\$ 4											\$ 18,600		\$ -	\$ -
BE-2		Bell Street	County Line	Route 306	10,200		\$ 1	11.5	\$ 10	\$ 115	\$ 240	\$ 160						\$ 10,200	\$ 1,173,000	\$ 2,448,000	\$ 1,632,000
BE-3		Bell Street	Route 306	Silver Springs Trail	7,150		\$ 1	11.5	\$ 10	\$ 115	\$ 240	\$ 160						\$ 7,150	\$ 822,250	\$ 1,716,000	\$ 1,144,000
BE-4		Bell Street	Silver Springs Trail	S Russell Village	4,050		\$ 1	13.5	\$ 10	\$ 135								\$ 4,050	\$ 546,750		\$ -
BV		Bentleyville Road	Miles Road	Chagrin Boulevard	5,250	\$ 30											\$ 157,500			\$ -	\$ -
CH-1		Chagrin Boulevard	Limit of Study	Chagrin River Road	12,350		\$ 1	8.0	\$ 15	\$ 120								\$ 12,350	\$ 1,482,000	\$ -	\$ -
CH-2	B-1	Chagrin Boulevard	Chagrin River Road	North Main Street	7,050		\$ 1	8.0	\$ 18	\$ 144				\$ 165,000				\$ 7,050	\$ 1,180,200		\$ -
CHI		Chillicothe Road (SR306)	Music Street	Westwoods Park Ent.	4,900		\$ 1	8.0	\$ 10	\$ 80								\$ 4,900	\$ 392,000	\$ -	\$ -
CHR		Chagrin Road	Chagrin Falls Line	First Energy Corp.	6,150		\$ 1											\$ 6,150		\$ -	\$ -
CR-1		Chagrin River Road (R174)	South Woodland	Chagrin Boulevard	6,900		\$ 1				\$ 240	\$ 160						\$ 6,900	\$ -	\$ 1,656,000	\$ 1,104,000
CR-2		Chagrin River Road (R174)	Chagrin Boulevard	Jackson Street	4,500		\$ 1				\$ 240	\$ 160						\$ 4,500	\$ -	\$ 1,080,000	\$ 720,000
CR-3	B-3	Chagrin River Road (R174)	Jackson Street	Metroparks Trailhead	2,200		\$ 1				\$ 240	\$ 160	80	\$ 170,000	\$ 200,000			\$ 2,200	\$ -	\$ 698,000	\$ 552,000
CR-4	B-4*	Chagrin River Road (R174)	Metroparks Trailhead	Miles	650		\$ 1				\$ 1,500	\$ 1,200						\$ 650	\$ -	\$ 975,000	\$ 780,000
CR-5	B-7	Chagrin River Road (R174)	Miles	Solon Road	5,000		\$ 1				\$ 150	\$ 100	120	\$ 456,000	\$ 240,000			\$ 5,000	\$ -	\$ 478,500	\$ 990,000
CR-6		Chagrin River Road (R174)	Solon Road	Limit of Study	5,400		\$ 1	12.5	\$ 15	\$ 188	\$ 240	\$ 160						\$ 5,400	\$ 1,012,500	\$ 1,296,000	\$ 864,000
EW-1		E. Washington Street	Main Street	County Line	4,750		\$ 2											\$ 9,500	\$ -	\$ -	\$ -
EW-2		E. Washington Street	County Line	Founder's Field	2,050	\$ 35	\$ 1										\$ 71,750	\$ 2,050	\$ -	\$ -	\$ -
EW-3		E. Washington Street	Founder's Field	First Energy Corridor	2,575		\$ 1	5.0	\$ 15	\$ 75	\$ 240	\$ 160						\$ 2,575	\$ 193,125	\$ 618,000	\$ 412,000
FA		Falls Road	North Street	South Woodland	3,500		\$ 1											\$ 3,500	\$ -	\$ -	\$ -
FEC		First Energy Corp. Corridor	East Washington	Music Street	14,500						\$ 100	\$ 60								\$ 1,450,000	\$ 870,000
FR-1		Franklin Street	Chagrin River Road	Mogul Street	7,000		\$ 1	10.0	\$ 10	\$ 100								\$ 7,000	\$ 700,000	\$ -	\$ -
FR-2		Franklin Street	Mogul Street	Washington Street	3,500		\$ 4											\$ 14,000	\$ -	\$ -	\$ -
HE		Hemlock Street	Music Street	Bell Street	7,000		\$ 1											\$ 7,000	\$ -	\$ -	\$ -
JA-1		Jackson Road	Lander Road	SOM Center Road	5,500		\$ 1	14.0	\$ 10	\$ 140								\$ 5,500	\$ 770,000	\$ -	\$ -
JA-2	B-2	Jackson Road	SOM Center Road	Chagrin River Road	7,500		\$ 1	12.0	\$ 20	\$ 240				\$ 80,000				\$ 7,500	\$ 1,880,000		\$ -
LA		Lander Road	Miles Road	North to Project Limit	12,000		\$ 1				\$ 200	\$ 120						\$ 12,000	\$ -	\$ 2,400,000	\$ 1,440,000
LI		Liberty Road	Solon Road	Solon Line	3,200		\$ 1	4.0	\$ 10	\$ 40								\$ 3,200	\$ 128,000	\$ -	\$ -
MI-1		Miles Road	Harper Road	SOM Center Road	5,500		\$ 1	5.5	\$ 10	\$ 55	\$ 240	\$ 160						\$ 5,500	\$ 302,500	\$ 1,320,000	\$ 880,000
MI-2		Miles Road	SOM Center Road	Chagrin Valley Estates	3,500		\$ 1	5.5	\$ 10	\$ 55	\$ 240	\$ 160						\$ 3,500	\$ 192,500	\$ 840,000	\$ 560,000
MI-3		Miles Road	Chagrin Valley Estates	Chagrin River Road	3,500		\$ 1	5.5	\$ 20	\$ 110	\$ 300	\$ 160						\$ 3,500	\$ 385,000	\$ 1,050,000	\$ 560,000
MI-4	B-5 B-6	Miles Road	Chagrin River Road	Solon Road	7,000		\$ 1	5.5	\$ 20	\$ 110				\$ 300,000	\$ -			\$ 7,000	\$ 1,070,000		\$ -
MIL		Mill St./Cleveland St. **	Orange Street	Washington Street	2,950	\$ 330											\$ 973,500			\$ -	\$ -
MU		Music Street	First Energy Corp	Westwoods Park Ent.	3,000		\$ 1	8.0	\$ 10	\$ 80								\$ 3,000	\$ 240,000	\$ -	\$ -
NM-1		North Main Street	CBD	Kenton Road	4,000	\$ 30	\$ 1										\$ 120,000	\$ 4,000		\$ -	\$ -
NM-2		North Main Street	Kenton Road	Falls Road	6,000		\$ 1											\$ 6,000	\$ -	\$ -	\$ -
NO		North Street	Orange Street	Cleveland	2,400	\$ 30											\$ 72,000	\$ -	\$ -	\$ -	\$ -
OCHR-1		Orange/N/High/Clev/Russell	Main Street	Cleveland	2,350		\$ 1											\$ 2,350		\$ -	\$ -
OCHR-2		Orange/N/High/Clev/Russell	High Street	Falls Road	1,325		\$ 1											\$ 1,325		\$ -	\$ -
OCHR-3		Orange/N/High/Clev/Russell	Falls Road	Kinsman Road (Rt. 87)	8,950		\$ 1											\$ 8,950	\$ -	\$ -	\$ -
OL		Orange Library Connector	Orange School Campus	Orange Library (Cuy. Co.)	675						\$ 100	\$ 60								\$ 67,500	\$ 40,500
RR	B-9	Railroad Right-of-Way	Solon Line	Franklin Circle	7,600						\$ 100	\$ 60	120	\$ 456,000	\$ 240,000				\$ -	\$ 1,216,000	\$ 696,000
SM		South Main	Cedar Street	Washington Street	2,500		\$ 4											\$ 10,000	\$ -	\$ -	\$ -
SO-1		Solon Road	Solon Line	Cannon Road	3,375		\$ 1	10.3	\$ 10	\$ 103								\$ 3,375	\$ 345,938	\$ -	\$ -
SO-2	B-8	Solon Road	Cannon Road	Chagrin River Road	1,850		\$ 1	10.0	\$ 13	\$ 125				\$ -				\$ 1,850	\$ 231,250	\$ -	\$ -
SO-3		Solon Road	Chagrin River Road	Monticello Road	4,900		\$ 1	10.0	\$ 13	\$ 125	\$ 240	\$ 160						\$ 5,500	\$ 612,500	\$ 1,176,000	\$ 784,000
SO-4		Solon Road	Monticello Road	Main Street	4,500		\$ 1											\$ 4,500	\$ -	\$ -	\$ -
SW-1		South Woodland	SOM Center Road	Woodburn Drive	3,950		\$ 1	4.0	\$ 15	\$ 60	\$ 250	\$ 160						\$ 3,950	\$ 237,000	\$ 987,500	\$ 632,000
SW-2		South Woodland	Woodburn Dive.	Metroparks Trailhead	5,025		\$ 1	9.0	\$ 20	\$ 180								\$ 5,025	\$ 904,500	\$ -	\$ -
SW-3		South Woodland	Metroparks Trailhead	Falls Road	1,750		\$ 1	9.0	\$ 20	\$ 180				\$ -				\$ 1,750	\$ 315,000	\$ -	\$ -

Figure 25: Chagrin Falls Region Alternative Transportation Study Master Plan Cost Estimate



Funding & Implementation

In order to transform the recommendations in this report into reality, it is important to identify roles and responsibilities, project phases, funding strategies, and funding sources.

Roles and Responsibilities

The Stakeholders determined the next steps toward implementation will be to evaluate this report’s recommendations, establish each municipality’s priorities, seek partnerships with other municipalities and local entities, and determine who will be responsible for specific roles. Figures 26-29 display the study’s recommendations, grouped by municipality.

Phasing

The prioritized list of recommendations breaks down several large projects into more manageable tasks by priority level: Bell Street, Miles Road, and Solon Road. This report, however, lists the entire length of the Chagrin River Road facility, the largest project in the plan, as a high priority. If it is not feasible to implement the entire length at one time, the consultant recommends starting at Miles, and building segments toward the north, in order to extend the Emerald Necklace trail system. After the APT is completed to South Woodland, build the remaining SSR, APT, and pedestrain bridge south of Miles.

Funding Strategies and Sources

Since funding sources provide varying sizes of funds for different uses, it is important to match the appropriate source to each project stage and phase. The following FEDERAL funding information was supplied by NOACA, with its permission, and supplemented by the consultant.

Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) Sources

SAFETEA-LU, the name of the transportation legislation authorized by Congress in 2005, continues the emphasis of the previous bills since ISTEA of providing access to federal transportation money for transportation modes other than the personal automobile. At this time, all the major funding programs created under SAFETEA-LU include bicycle facilities and programs as eligible activities. It is also important to note that most of these funds can only be used to pay up to 80 percent of the cost of a bicycle or pedestrian project. The other 20 percent must be matched by the State or local government agency implementing the project.

Surface Transportation Program (STP)

These are flexible funds that can be used for a wide variety of transportation activities, including highways, transit, demand management, and safety. Bicycle projects are listed as eligible projects and these funds have been used in many areas for facilities, education and safety programs, and even the salaries of city or state bicycle coordinators. A 20% local match is required.

Transportation Enhancement Activities (TEA)

Ten percent of STP funds currently must be set aside by the State for specific types of projects, which include historic and scenic preservation,

beautification, archeological projects, highway water runoff, and bicycle and pedestrian projects. Every two years the State seeks proposals from local governments and prioritizes them for funding. A 20% local match is required.

Congestion Mitigation and Air Quality Program (CMAQ)

These are funds directed toward metropolitan areas that have not met the air quality standards set by the Clean Air Act as amended, and are earmarked for transportation projects, including bicycle projects, which will result in cleaner air.

Highway Safety Improvement Program (HSIP)

This is a new program replacing the Safety Set-Aside program. In addition to non-capital, safety-related activities (including traffic engineering studies and design, and bicycle safety programs), capital improvements for increasing bicycle safety are eligible, such as traffic calming features.

Safe Routes to School (SRTS) Program

Funding is provided to states. This program is targeted to primary and middle schools. The program will establish an SRS Clearinghouse and Task Force and full-time State SRTS coordinators. Between 10 percent and 30 percent of the funds must be used for non-infrastructure related activities.

Transportation, Community, and System Preservation Program (TCSP)

This program started as a pilot project and has been made permanent under SAFETEA-LU. Bicycle and pedestrian projects are eligible for funding.

National Highway System (NHS)

The National Highway System comprises the Interstate system and roads identified by states as important to the national and regional economy. Two types of bicycle projects are eligible for these funds: bicycle facilities that are an incidental part of an NHS project, such as trails along an interstate roadway that are built within the right-of-way simultaneous with the main project, or facilities constructed adjacent to NHS routes as independent projects.

Alternative Transportation in Parks and Public Lands

This program funds alternative transportation (specifically including non-motorized modes) in national parks and other public lands. (FTA)

National Recreational Trails Fund

A small fund specifically for recreational trails.

Scenic Byways

Bicycle facilities developed as part of national or state scenic byways are eligible for these funds.

Federal Lands Highways Program

Bicycle and pedestrian projects are eligible for these funds allocated to federal land management agencies, such as the National Park Service. There is no matching requirement for these funds.

Federal Transit Act

This Act has provisions for transit enhancements. Projects such as bicycle access to public transit, shelters and racks for parking bicycles at public transit facilities, and equipment for transporting bicycles on public transit are eligible for these funds. The federal share for these funds is 90 percent.



Department of the Interior Funding Sources

Rivers, Trails and Conservation Assistance Program

This program provides assistance to communities to develop plans, get public participation, and identify funding. It does not provide financial assistance. Project partners may be non-profit organizations, community groups, tribes or tribal governments, and local, state, or federal government agencies. Assistance is for one year and may be renewed for a second year if warranted.

Land and Water Conservation Funds

For the acquisition of land for recreation and the development of recreational facilities, this fund could be used for bicycle projects that are primarily recreational.

Other Sources

Smaller improvements, such as neighborhood connectors, information kiosks, and trail head enhancements could be applied for through the Ohio Department of Natural Resources (ODNR), Division of Real Estate & Land Management (DRELM) Programs. The Recreational Trails Program and Land and Water Conservation Fund, mentioned above, are available through the DRELM, in addition to the following two sources:

Natureworks

This statewide grant typically funds playgrounds, parking improvements, landscaping and other small projects. Typical award amount is less than \$30,000. Funding requires a minimum of 25% local match.

Clean Ohio Trails Fund

The Clean Ohio Trails Fund works to improve outdoor recreational opportunities for Ohioans by funding trails for outdoor pursuits of all kinds. Special emphasis is given to projects with the following characteristics:

- Consistent with the statewide trail plan
- Completes regional trail systems and links to the statewide trail plan
- Links population centers with outdoor recreation area and facilities
- Involves the purchase of rail lines linked to the statewide trail plan
- Preserves natural corridors
- Provides links in urban areas to support commuter access and provide economic benefit.

A 25% local match is required. Planning, engineering, construction and acquisition are funded through this program.

For more information about funding from ODNR, go to:

www.dnr.state.oh.us/tabid/10762/Default.aspx



RECOMMENDATION #																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Figure 26: Recommendations—By Municipality
 (Orange = high priority recommendations, Green = medium priority recommendations, Blue = low priority recommendations)



RECOMMENDATION #	CHAGRIN FALLS	Segment	Construction Cost	Soft Cost	Total Project Cost	Reason(s)/Comments	BAINBRIDGE	BENTLEWILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	SOLON	S. RUSSELL VILLAGE
3	North Main sidewalk	NM-1	\$ 120,000	\$ 24,000	\$ 144,000	Connect students to CFEVS campus			Y								
4	North Street sidewalk	NO	\$ 72,000	\$ 14,400	\$ 86,400	Connect students to CFEVS campus			Y								
5	Mill Street sidewalk	MIL	\$ 973,500	\$ 194,700	\$ 1,168,200	Connect students to CFEVS campus			Y								
7	Solon Road APT--Chagrin River Road to existing Chagrin Falls sidewalks	SO-3	\$ 1,176,000	\$ 411,600	\$ 1,587,600	Connect Chagrin Valley Trails housing & Solon to CF and CFEVS campus		Y	Y								
8	Chagrin Boulevard bike lanes	CH-2	\$ 1,180,200	\$ 354,060	\$ 1,534,260				Y	Y		Y					
10	Miles Rd. bike lanes--Chagrin River Road to CF	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Popular conduit between CF and South Chagrin Reservation		Y	Y			Y					
12	Bell Street SSR into Chagrin Falls	BE-1	\$ 18,600	\$ 2,790	\$ 21,390	Connect Bell St. APT to CF and students to CFEVS campus			Y								
23	East Washington SSR	EW-1 & 2	\$ 11,550	\$ 1,733	\$ 13,283	Connect to First Energy corridor			Y								Y
24	South Main SSR	SM	\$ 10,000	\$ 1,500	\$ 11,500	Connect to First Energy corridor			Y								
25	Solon Road SSR	SO-4	\$ 4,500	\$ 675	\$ 5,175	Connect to CF			Y								
31	Franklin Street bike lanes	FR-1	\$ 700,000	\$ 210,000	\$ 910,000	Secondary north-south connection between Solon/Bainbridge and CF	Y	Y	Y								
32	Miles Road Bike lanes--Chagrin Valley Est to CRR	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Parallel route to Chagrin Reservation APT		Y	Y			Y					
33	Falls Road SSR	FA	\$ 3,500	\$ 525	\$ 4,025	Secondary connection between Shaker APT and CF			Y	Y	Y	Y					
34	Franklin Street SSR	FR-1	\$ 7,000	\$ 1,050	\$ 8,050	Secondary north-south connection between Solon/Bainbridge and CF	Y	Y	Y								
		FR-2	\$ 14,000	\$ 2,100	\$ 16,100		Y		Y								
35	Hemlock St. SSR	HE	\$ 7,000	\$ 1,050	\$ 8,050	Secondary NE connector from CF			Y						Y		Y
36	North Main Street SSR	NM-1	\$ 4,000	\$ 600	\$ 4,600	Secondary connection between Shaker APT and CF			Y								
		NM-2	\$ 6,000	\$ 900	\$ 6,900				Y	Y							
37	Orange/N/High/Clev/Russell SSR	OCHR-1	\$ 2,350	\$ 353	\$ 2,703	Secondary NE connector from CF			Y								
		OCHR-2	\$ 1,325	\$ 199	\$ 1,524				Y								
		OCHR-3	\$ 8,950	\$ 1,343	\$ 10,293				Y						Y		

CHAGRIN FALLS TOWNSHIP

8	Chagrin Boulevard bike lanes	CH-2	\$ 1,180,200	\$ 354,060	\$ 1,534,260	Close gap between C.F. and Shaker Blvd. APT			Y	Y		Y					
33	Falls Road SSR	FA	\$ 3,500	\$ 525	\$ 4,025	Secondary connection between Shaker APT and CF			Y	Y	Y	Y					
36	North Main Street SSR	NM-2	\$ 6,000	\$ 900	\$ 6,900	Secondary connection between Shaker APT and CF			Y	Y							

Figure 27: Recommendations—By Municipality

(Orange = high priority recommendations, Green = medium priority recommendations, Blue = low priority recommendations)



RECOMMENDATION #		Segment	Construction Cost	Soft Cost	Total Project Cost	Reason(s)/Comments	BAINBRIDGE	BENTLEYVILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	SOLOM	S. RUSSELL VILLAGE
HUNTING VALLEY																	
26	South Woodland APT	SW-1	\$ 987,500	\$ 345,625	\$ 1,333,125	Secondary connection between Shaker APT and CF					Y	Y		Y			
30	South Woodland bike lanes	SW-2	\$ 904,500	\$ 271,350	\$ 1,175,850	Secondary connection between Shaker APT and CF					Y	Y		Y			
33	Falls Road SSR	FA	\$ 3,500	\$ 525	\$ 4,025	Secondary connection between Shaker APT and CF			Y	Y	Y	Y					
MORELAND HILLS																	
2	Chagrin River Road APT	CR-1	\$ 1,656,000	\$ 579,600	\$ 2,235,600	Extend Metroparks network						Y					
		CR-2	\$ 1,080,000	\$ 378,000	\$ 1,458,000	Highly desirable greenway						Y					
		CR-3	\$ 698,000	\$ 244,300	\$ 942,300	Used by local and regional residents						Y					
		CR-4	\$ 975,000	\$ 341,250	\$ 1,316,250			Y				Y					
6	Lander Road APT, incl. Beech Brook connection	LA & BB	\$ 2,800,000	\$ 980,000	\$ 3,780,000	Strong N-S Orange Village conduit and connection to Orange Schools						Y	Y	Y			
8	Chagrin Boulevard bike lanes	CH-1	\$ 1,482,000	\$ 444,600	\$ 1,926,600	Close gap between C.F. and Shaker Blvd. APT						Y					
		CH-2	\$ 1,180,200	\$ 354,060	\$ 1,534,260				Y	Y		Y					
10	Miles Rd. bike lanes--Chagrin River Road to CF	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Popular conduit between CF and South Chagrin Reservation		Y	Y			Y					
20	Jackson Street bike lanes	JA-1	\$ 770,000	\$ 231,000	\$ 1,001,000	Connect suburbs west of CF to CF and Metroparks network						Y	Y				
		JA-2	\$ 1,880,000	\$ 564,000	\$ 2,444,000							Y					
26	South Woodland APT	SW-1	\$ 987,500	\$ 345,625	\$ 1,333,125	Secondary connection between Shaker APT and CF					Y	Y		Y			
27	Miles Road APT	MI-1	\$ 1,320,000	\$ 462,000	\$ 1,782,000	Parallel route to Chagrin Reservation APT						Y	Y			Y	
		MI-2	\$ 840,000	\$ 294,000	\$ 1,134,000							Y				Y	
		MI-3	\$ 1,050,000	\$ 367,500	\$ 1,417,500			Y				Y					
30	South Woodland bike lanes	SW-2	\$ 904,500	\$ 271,350	\$ 1,175,850	Secondary connection between Shaker APT and CF					Y	Y		Y			
32	Miles Road Bike lanes--Chagrin Valley Est to CRR	MI-4	\$ 1,070,000	\$ 321,000	\$ 1,391,000	Parallel route to Chagrin Reservation APT		Y	Y			Y					
33	Falls Road SSR	FA	\$ 3,500	\$ 525	\$ 4,025	Secondary connection between Shaker APT and CF			Y	Y	Y	Y					

Figure 28: Recommendations—By Municipality
 (Orange = high priority recommendations, Green = medium priority recommendations, Blue = low priority recommendations)



RECOMMENDATION #	PEPPER PIKE	Segment	Construction Cost	Soft Cost	Total Project Cost	Reason(s)/Comments	BAINBRIDGE	BENTLEYVILLE	CHAGRIN FALLS	CH. FALLS TWP.	HUNTING VALLEY	MORELAND HILLS	ORANGE	PEPPER PIKE	RUSSELL TWP.	SOLON	S. RUSSELL VILLAGE
6	Lander Road APT, incl. Beech Brook connection	LA & BB	\$ 2,800,000	\$ 980,000	\$ 3,780,000	Strong N-S Orange Village conduit and connection to Orange Schools						Y	Y	Y			
19	Orange Library Connector	OL	\$ 67,500	\$ 20,250	\$ 87,750	Connect to First Energy corridor								Y			
26	South Woodland APT	SW-1	\$ 987,500	\$ 345,625	\$ 1,333,125	Secondary connection between Shaker APT and CF					Y	Y		Y			
30	South Woodland bike lanes	SW-2	\$ 904,500	\$ 271,350	\$ 1,175,850	Secondary connection between Shaker APT and CF					Y	Y		Y			
RUSSELL TOWNSHIP																	
15	First Energy APT	FEC	\$ 1,450,000	\$ 507,500	\$ 1,957,500	Connect CF and SRV to West Woods	Y								Y		Y
21	Music Street bike lanes	MU	\$ 240,000	\$ 72,000	\$ 312,000	Connect to West Woods									Y		
29	Chillicothe Road bike lanes	CHI	\$ 392,000	\$ 117,600	\$ 509,600	Only if citizens agree better option than Music St.									Y		
35	Hemlock St. SSR	HE	\$ 7,000	\$ 1,050	\$ 8,050	Secondary NE connector from CF			Y						Y		Y
37	Orange/N/High/Clev/Russell SSR	OCHR-3	\$ 8,950	\$ 1,343	\$ 10,293				Y						Y		
SOLON																	
27	Miles Road APT	MI-1	\$ 1,320,000	\$ 462,000	\$ 1,782,000	Parallel route to Chagrin Reservation APT						Y	Y			Y	
		MI-2	\$ 840,000	\$ 294,000	\$ 1,134,000							Y				Y	
SOUTH RUSSELL VILLAGE																	
1	Bell Street APT--Chagrin Falls line to Route 306	BE-2	\$ 2,448,000	\$ 856,800	\$ 3,304,800	High public interest											Y
		BE-3	\$ 1,716,000	\$ 600,600	\$ 2,316,600	Connect S.R.V. children with schools											Y
13	Bell Street APT 306 to Silver Springs	BE-3	\$ 1,716,000	\$ 600,600	\$ 2,316,600	CF											Y
15	First Energy APT	FEC	\$ 1,450,000	\$ 507,500	\$ 1,957,500	Connect CF and SRV to West Woods	Y								Y		Y
17	East Washington APT	EW-3	\$ 618,000	\$ 216,300	\$ 834,300	Connect to First Energy corridor	Y										Y
18	East Washington Sidewalk	EW-2	\$ 73,800	\$ 22,140	\$ 95,940	Connect to First Energy corridor											Y
23	East Washington SSR	EW-1 & 2	\$ 11,550	\$ 1,733	\$ 13,283	Connect to First Energy corridor			Y								Y
28	Bell Street bike lanes	BE-4	\$ 546,750	\$ 164,025	\$ 710,775	Eastern-most stretch of SRV connection to CF											Y
35	Hemlock St. SSR	HE	\$ 7,000	\$ 1,050	\$ 8,050	Secondary NE connector from CF			Y						Y		Y

Figure 29: Recommendations—By Municipality
 (Orange = high priority recommendations, Green = medium priority recommendations, Blue = low priority recommendations)



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Appendix A: Stakeholder Meeting Minutes

B E H N K E

B

MEMO

TO: City of Chagrin Falls **DATE:** March 29, 2010

ATTN: Ben Himes **PROJECT:** C.F. Region Alt. Transportation Study (Cfrats)

RE: 3-25-10 Stakeholder Meeting #1 **PROJECT NO:** 1002
Revised 4-1-10

EMAIL: ben@chagrin-falls.org **NO. of PAGES:** 11
(including cover)

FROM: Matt Hils ☐ Hard copy to follow

COMMENTS:

Attendees:

- Mayor Tom Brick, Village of Chagrin Falls, 440-247-8399, mayorbrick@chagrin-falls.org
- Ben Himes, Village of Chagrin Falls, 440-247-5050, ben@chagrin-falls.org
- Greg Hopkins, Village of Chagrin Falls Hike-Bike, 216-401-1121, ghopkins@signaturedevelopmentgroup.net
- Nancy Rogoff, Village of Chagrin Falls Planning & Zoning Commission, 440-247-1452, nrogoff@sbcglobal.net
- Mayor Matt Brett, South Russell Village, 440-338-6700, mbrett@sage-quest.com
- Bill Koons, South Russell Village, 440-338-1524, wnek3@roadrunner.com
- Dan Brown, Orange Village representative, 440-248-6005, dbrown@partnersenv.com
- Keith McClintock, Geauga Park District, 440-286-9516 x1108, kmcclintock@geaugaparkdistrict.org
- Dick Kerber, Cleveland Metroparks, 216-635-3245, rjk@clevelandmetroparks.com
- Michelle Johnson, NOACA, 216-241-2414, mjohnson@mpo.noaca.org
- Matt Hils, Behnke Associates, 216-589-9100, mhils@behkeassoc.com
- Tom Zarfoss, Behnke Associates, 216-589-9100, mhils@behkeassoc.com

Did not attend, but will be included as a stakeholder and in the email distribution list, unless Matt Hils is directed otherwise:

- Steve Latkovic, South Russell Multipurpose Trail Foundation, 440-552-7018, steve.latkovic@cbre.com
- Mayor Susan Renda, Moreland Hills, 440-248-1188, srenda@morelandhills.com
- Mayor Leonard Spremulli, Village of Bentleyville, 440-247-5055, lspremulli@villageofbentleyville.com
- Mayor Kathy Mulcahy, Orange Village, 440-498-4400, mulcahyk@orangevillage.com

We encourage all stakeholders (or a representative) to attend all of the stakeholder meetings, and if possible, each of the public workshops. One of Behnke Associates' goals for the project is full participation and input from the stakeholders, for the development of a plan that is as comprehensive and representative of the needs of the study area's communities as possible.

The following topics were discussed:

1. **Project scope, goals & objectives, and schedule:** The scope of services and deliverables are on the following pages. The project schedule was set as follows:
 - a. **Existing Conditions Inventory and Opportunities & Constraints Analysis: 4/1 – 4/30**
 - i. Committee Meeting #2: 4/21, 3:00 PM, Chagrin Falls Village Hall
 - ii. Public Workshop #1: 4/27, 7:00 PM, Chagrin Falls High School cafeteria (confirmed by Bill Koons)
 - b. **Concept Plan Development: 5/3 – 5/31**
 - i. Committee Meeting #3: 5/19, 3:00 PM, Chagrin Falls Village Hall
 - ii. Public Workshop #2: 5/25, 7:00 PM, Chagrin Falls High School cafeteria
 - c. **Draft Final Plan: 6/1 – 7/9**
 - i. Committee Meeting #4: 6/23, 3:00 PM, Chagrin Falls Village Hall
 - ii. Public Workshop #3: 7/6, 7:00 PM, Chagrin Falls High School cafeteria **NOTE: PUBLIC MEETING IS 2 WEEKS AFTER COMMITTEE MEETING, IN ANTICIPATION OF JULY 4 WEEK.**
 - d. **Final Plan and Report: 7/9 – 7/30**
 - i. Committee Meeting #5 (if necessary): 7/21, 3:00 PM, Chagrin Falls Village Hall
2. **Base Information:**
 - a. Behnke is looking for Historic, cultural, and/or environmental data/landmarks/destinations/hot spots. Dan Brown will send Matt links to information on databases with some of this information. Behnke will contact the Ohio Historical Society.
 - b. Behnke has requested property boundary and existing trail and bikeway information from Geauga Parks. Geauga Parks to send to Matt.
3. **Existing studies and plans:**
 - a. Behnke has a copy of and will review the following studies and plans. Matt asked if there are any others.
 - i. NOACA 2008 Regional Bicycle Transportation Plan
 - ii. NOACA 2009 Bicycle Transportation Map
 - iii. Orange Village 2009 Bike Route Study
 - iv. Chagrin Falls 2009 Safe Routes to School Travel Plan
 - b. Chagrin Falls noted there is a trail map for Whitesburg Park—could someone send to Behnke?
 - c. Dan Brown mentioned various groups (Lake Erie Wheelers, Western Reserve Cyclists) have posted desirable road bike routes on the web. Behnke requested Brown to send links, and Behnke will investigate further.
 - d. Michelle Johnson advised RTA will change their bus routes and schedules on April 4.
 - e. Michelle Johnson suggested looking at connecting to the Blue Line (rapid transit), and how to connect to the Lakes to Lake trail, at Shaker Lakes.
 - f. Greg Hopkins advised that Bentleyville has an existing bikeway plan. Behnke will pursue securing a copy of it.
4. **Public Workshop Advertisement:** Behnke recommended utilizing as many forms of media as possible, to reach as many people as possible, within the study area communities. Examples and suggestions include:
 - a. Internet, Newspapers, TV, Newsletters, local bike shops and clubs
 - b. Press Release: A draft press release is included in these meeting minutes, following the Scope of Services and Deliverables. PLEASE REVIEW CAREFULLY, AND SEND ANY COMMENTS TO MATT BY THURSDAY, APRIL 1. Matt will send a final to everyone Friday, April 2.

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Principals:
Lee Behnke
Thomas F. Zarfoss
P. Jeffrey Knapp

Landscape Architecture
Planning

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- c. Information for article: A 3-18-10 Sun News article is at the end of these meeting minutes. Other pertinent information for an article includes:
 - i. The study area covers 21 square miles and 8 communities
 - ii. Goals of the study include:
 1. Soliciting public input to nourish the planning process.
 2. How to connect to community assets, such as schools, parks, libraries, city halls, employment centers, and key retail areas.
 3. How to connect to regional assets, such as Cleveland Metropark and Geauga Park District parks.
 4. How to connect and add to regional trail networks.
 5. Improve safety for all non-motorized modes of transportation.
 - d. Target Groups: Bicycling and hiking groups, business groups
5. **Workshop Format:** for public meetings with attendees of more than 10, Behnke prefers to introduce the project and the goals for that meeting, and then break down into subgroups of 5-10, for discussion of relevant topics. The subgroups will then report back to everyone near the end of the meeting. All comments and suggestions will be recorded.
 6. **Project Communication:**
 - a. All project communication should go through Matt Hils, at mhils@behnkeassoc.com, 216-589-9100. Matt will direct questions, comments, information, to the appropriate people.
 - b. Michelle Johnson requested all meeting dates be distributed in Outlook appointment format. Matt will send.
 7. **Other Input and discussion:**
 - a. Matt expressed this study is for all forms of non-motorized transportation, not just bicycles. Michelle Johnson clarified the grant is not intended for bridal route planning or design. It was agreed, however, it is important to include any interested equestrian users in the planning process, to coordinate with and avoid creating conflicts with bridal and non-bridal users.
 - b. Dan Brown asked if this study was the proper venue for making the suggestion of updating local zoning codes to require or encourage the addition of bicycle lanes on roads which are due for improvements. Matt responded that one of the goals of the study is to solicit all public comments and suggestions, and to evaluate them for inclusion in the final recommendations of the report.
 - c. The fact that there are different bicycle user groups (e.g., family, recreational, commuter, serious road cyclists,) was discussed. Another goal of the study will be to identify the preferred routes for each group, and make recommendations for each group.

If any recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hils by April 9, or these minutes will be considered factually correct.

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Principals:
Lee Behnke
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P. Jeffrey Knapp

Landscape Architecture
Planning

Appendix A: Stakeholder Meeting Minutes

Chagrin Falls Region Alternative Transportation Study—Final Report

Chagrin Falls Region Alternative Transportation Study SCOPE OF SERVICES & DELIVERABLES

March 25, 2010

1. Project Start Up and Administration

Sponsor/Co-Sponsor Workshop

The Behnke project team will host a 'Sponsor/Co-sponsor' (hereafter referred to as 'Stakeholder') workshop and the key members of the consulting team will be present. This is a very important step in the process because we will:

- establish relationships, roles and responsibilities,
- identify key stakeholders, develop draft purpose and need
- confirm the project scope and schedule,
- develop communications paths and strategies, and
- establish a time, place and format for each of the Steering Committee and Community Workshops.

DELIVERABLES: Interim report that documents the Stakeholder Committee Workshop. All stakeholders will receive a PDF of each interim report, via email.

2. Existing Conditions Inventory and Opportunities & Constraints Analysis

This task lays the foundation for the 'Plan.' During this task we will research and depict, in graphic and written form, the following:

- Existing trails
- Stakeholder plans (local trail projects, etc.)
- Existing GIS data - Cuyahoga County, Geauga County, Cleveland Metroparks, and Geauga Park District
 - Aerial Photography
 - Topography
 - Parcels / Ownership
 - Vegetation cover
 - Soils
 - Hydrology
 - Environmental/ecological base line mapping from existing sources
 - Other
- Infrastructure information from the stakeholder communities and others
- Field investigation - walk/drive through
- Photographic inventory
- Identify and map within the study area:
 - Land use
 - Neighborhoods
 - Municipal/office/retail areas



- Parks and schools
 - Historical & cultural resources
- Regulatory issues
- Existing key artery traffic counts/accident data
- Barriers and constraints to possible routes
 - Topography
 - Ownership
 - Soils
 - Flood plain/wetlands
 - Vehicular/pedestrian traffic conflicts
 - Utility infrastructure/ROWs
 - Environmental, historic, or cultural conflicts
 - Other
- Opportunities
 - Public properties/Rights-of-Way
 - Potentially cooperative private stakeholders/owners
 - Interpretive opportunities
- Intermodal transportation opportunities and constraints

Stakeholder Workshop

- Present and discuss:
 - Existing conditions inventory findings
 - Opportunities and constraints analysis
- Incorporate stakeholder input into Community Workshop materials.

Community Workshop: Existing Conditions Inventory and Opportunities & Constraints

Since this is the first community workshop, the Design Team will introduce the project in detail, including goals, scope and schedule. We will then present our existing conditions findings and opportunities and constraints analysis in graphic form. We typically break out into small groups to obtain specific input regarding our findings. Each group will then report back to the entire group. (Meeting format may vary according to attendance & facility type.) We will close the meeting by informing everyone about the next steps in the process.

DELIVERABLES: The interim report will include both maps and a written summary of findings and their significance. It will include a detailed summary of the community workshop, specifically focusing on how that input will shape the next steps.

3. Concept Plan Development

Based on the data collected and public input, we will begin to prepare routing options for Alternative Transportation Routes and Trails. As we do this, we will accomplish the following tasks:

- Incorporate stakeholder and public input
- Compile design standards
- Map various options, including
 - Plans
 - Cross sections
 - Trailhead locations
- Field verify options
- Prepare an evaluation matrix that includes:
 - Identification of barriers
 - Cost issues
 - Constructability issues
 - Acquisition issues
 - Safety issues/ability to meet standards
 - Interpretation opportunities
 - Quality of user experience
 - Consistency with goals and objectives
 - Possible design exception issues
 - Fundability issues
 - Phasing issues
 - Other
- Reconcile options with existing NOACA bike priority routes within study area
- Develop interpretive opportunities

Stakeholder Workshop

- The Behnke Team will present our findings. Our goal is to take full advantage of local knowledge and make sure we have not overlooked anything.
- Incorporate stakeholder input into Community Workshop materials.

Community Workshop: Concept Plan Development

- Briefly review the findings from the first Community Workshop.
- Discuss design standards
- Present the team's alternative transportation route and trail concepts, in graphic form.
- The format of this public meeting will depend on the number of attendees at the first public meeting. If 50 or fewer people attended the first meeting, we will:
 - Break into small groups to obtain specific input regarding our findings.
 - Each group will report back to the entire group.
 If more than 50 people attended the first meeting, we will set up manned stations on a circuit for each attendee to visit and provide input on.
- Inform everyone of the next steps in the process.

DELIVERABLES: This interim report will include detailed mapping of all preliminary routes, a copy of the evaluation matrix, typical details, comparative cost analysis, and a detailed summary of the Community Workshop with a focus on how that input is shaping the process.



4. Final Plan – DRAFT

The draft will include refined routing options and possible phasing and funding strategies to help stakeholders see how the project could be implemented. This document is considered a 'DRAFT' because we expect to make revisions after our final presentations.

- Incorporate stakeholder and public input
- Refine route and trail options
- Develop Implementation Strategy
 - Define roles and responsibilities
 - Discuss Funding strategy
 - Discuss Phasing strategy

DELIVERABLES: Draft written summary report of, and justification for all findings and recommendations, including:

- Inventory data
- Summary of public meeting comments
- Design standards
- Preferred routes and trails
- Viable alternatives, if any
- Related possible enhancements, such as interpretive opportunities
- Color-rendered Route & Trail Master Plan Map(s) at suitable scale
- Construction Details for accurate cost estimating
- Cost estimates
- Referenced standards
- Implementation strategies, including funding and phasing

Stakeholder Workshop

- Present and discuss Draft Plan
- Develop consensus
- Incorporate stakeholder input into Community Workshop materials.

Community Workshop: Final Plan

- Present and discuss Draft Plan
- Develop consensus
- Make final revisions to plan.

5. Final Plan and Report

The final plan and report will incorporate all stakeholder and public input. It will consist of a written and graphic summary of the entire planning process, and justification for all findings and recommendations.

6. Presentations as required

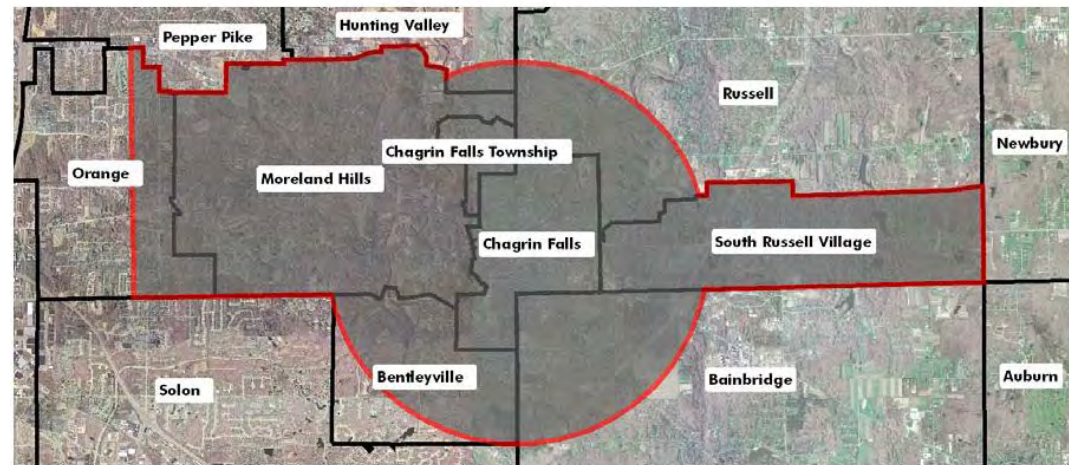
Chagrin Falls Region Alternative Transportation Study
Stakeholder Committee Meeting #1 – Project Startup and Administration
March 25, 2010

Sign in Sheet

Name	Organization	Postal Address	Phone Number	Email Address
KATH McVICKAR (crop visible window area)	REINKE ASSOCIATES	1215-B W. 10TH ST. CLEVELAND, OH 44115	216-589-9100	MHILY @ BRAINREASSOC.COM
TOM ZARFESS	"	"	"	TEARPOSE @
KATH McVICKAR	GENOVA DEVELOPMENT	9140 ROBINSON RD. CLEVELAND 44104	440-286-9516 x1108	KMCHILY@genova-development.org
TOM BRUCK	CHAGRIN FALLS	21 W. WASHINGTON CHAGRIN FALLS 44022	440-307-8359	THOMASBRUCK@chagrin-falls.org
MATT BRETT	SOUTH RUSSELL	5205 CHILLICOTHE ROAD	440-338-6700	MBRETT@SPACE-CREST.COM
Nancy Rogoff	C.F. Planning & Zoning Comm	21 W. Washington C.F. 44022	440-247-1452	NROGOFF@SOGOLD.BAL.NET
Don B. Brown	Orange Village	4400 Carter Road C.V., Oh. 44022	440-248-6005 (w)	dbrown@partnersenv.com
Ben Himes	CHAGRIN FALLS	21 W. Washington St	440-247-5050	ben@chagrin-falls.org
Gregg Hopkins	CHAGRIN FALLS	105 Edgewood Court, CF 44022	216-401-1121	ghopkins@regenerative-development-group.net
Bill Koens	SOUTH RUSSELL	61 POTOMAC DRIVE C.F. 44032	440-338-1534	W.NEKS @KORADRUNNER.COM
Dick Karter	Cleveland Metropolitan	4101 Fulton Parkway, Clevel 44114	216-635-3245	rjk@clevelandmetropark.com
MICHELLE JOHNSON	NORCA	2091 SUPERIOR AVE., CLEVELAND 44114	216.241.2414	MJOHNSON@MED.NORCA.ORG

PRESS RELEASE
For Immediate Release
3/30/10
For More Information
Contact: Bill Himes,
Chief Administrative Officer
Telephone: 440-247-5050

CHAGRIN FALLS REGION ALTERNATIVE TRANSPORTATION STUDY



Chagrin Falls, OH May 30, 2010 — The Villages of Bentleyville, Chagrin Falls, Moreland Hills, Orange, South Russell, along with Cleveland Metroparks, Geauga Park District, and planning consultant Behnke Associates, are studying route options for non-motorized transportation (including bicycling and walking,) within the red-outlined study area shown above.

Three community meetings will provide all interested citizens within the study area an opportunity to participate in the planning process.

Meeting #1: Existing Conditions and Opportunities & Constraints

Location: Chagrin Falls High School, 400 East Washington Street, Cafeteria

Date & Time: April 27, 2010; 7:00 p.m.

Discussion: Existing conditions and issues that may affect the location of alternative transportation routes

Meeting #2: Concept Plan and Options

Location: Chagrin Falls High School, 400 East Washington Street, Cafeteria

Date & Time: May 25, 2010; 7:00 p.m.

Discussion: Options for possible alternative transportation route and trail locations

Meeting #3: Route and Trail Plan

Location: Chagrin Falls High School, 400 East Washington Street, Cafeteria

Date & Time: July 6, 2010; 7:00 p.m.

Discussion: Proposed route and trail alignments

Questions may be directed to the following individuals:

Village of Bentleyville: Mayor Leonard Spremulli, 440-247-5055

Village of Chagrin Falls: Benjamin Himes, Chief Administrative Officer, 440-247-5050

Village of Moreland Hills: Mayor Susan Renda, 440-248-1188

Village of Orange: Dan Brown, Village Representative, 440-248-6005

Village of South Russell: Mayor Matt Brett, 440-338-6700

Chagrin Falls, other valley communities get \$85,000 grant to study hiking and biking trails Page 1 of 2



Chagrin Falls, other valley communities get \$85,000 grant to study hiking and biking trails

By Lindsay Betz, Sun News

March 18, 2010, 10:12AM



CHAGRIN FALLS -- Village Council has accepted a grant to study the expansion of hiking and biking trails in the Chagrin Valley.

The \$85,000 study will look at trails in the region and identify ways in which they might be connected to trails in surrounding communities.

The grant is for \$68,000 and will be administered through the Northeast Ohio Areawide Coordinating Agency's Transportation for Livable Communities Initiative planning grant program.

The \$17,000 local match will be shared by Chagrin Falls, South Russell, the South Russell Trails Multipurpose Trails Foundation, Moreland Hills, Orange and the Cleveland Metroparks.

Chagrin Falls has committed \$4,000 to the study.

The overall goal is to create a "network of alternative transportation routes," according to Greg Hopkins, co-chair of the village's ad hoc hiking and biking committee.

Councilwoman Janna Lutz said the study is the first step in the process and must be completed before any actual planning or construction of future trails.

When completed, the study can be used to help apply for other grants for construction.

"This has been an ongoing endeavor . . . of creating bike paths and trails that link our village to hiking land farther out as part of our green space and hiking program," said Lutz, who chairs the village's Parks Commission.

The study will be completed by the planning and landscape architectural firm Behnke and Associates, which helped write the grant proposal.

Hopkins said Behnke comes highly recommended and has completed numerous studies of this nature and constructed many trails.

He said the first step will be a meeting with all the local stakeholders, followed by a public meeting on the subject at the end of March or beginning of April.

Hopkins said they will work closely with Safe Routes to Schools, which has some similar goals and has created an impetus for safe walking and biking trails in the village.

The area of the study will include South Russell, Bentleyville, Chagrin Falls, Bainbridge and Moreland Hills.

The final report will include detailed maps of preferred alternative routes, estimates of their construction cost

http://blog.cleveland.com/chagrinsolonsun/print.html?entry=/2010/03/chagrin_falls_other_... 3/30/2010



Appendix A: Stakeholder Meeting Minutes

Chagrin Falls Region Alternative Transportation Study—Final Report

and priorities and strategies for implementation, including funding options.

Contact Betz at (216) 986-5867.

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B E H N K E

B

MEMO

TO: City of Chagrin Falls

DATE: April 30, 2010

ATTN: Ben Himes

PROJECT: C.F. Region Alt. Transportation Study (Cfrats)

RE: 4-21-10 Stakeholder Meeting #2

PROJECT NO: 1002

EMAIL: ben@chagrin-falls.org

NO. of PAGES: 4 (including cover)

FROM: Matt Hills

☐ Hard copy to follow

COMMENTS:

- Attendees (Stakeholders marked with *):
- Mayor Tom Brick*, Village of Chagrin Falls, 440-247-8399, mayorbrick@chagrin-falls.org
 - Ben Himes*, Village of Chagrin Falls, 440-247-5050, ben@chagrin-falls.org
 - Greg Hopkins*, Village of Chagrin Falls Hike-Bike, 216-401-1121, ghopkins@signaturedevelopmentgroup.net
 - Nancy Rogoff, Village of Chagrin Falls Planning & Zoning Commission
 - Mayor Matt Brett*, South Russell Village, 440-338-6700, mbrett@sage-quest.com
 - Bill Koons*, South Russell Village, 440-338-1524, wnek3@roadrunner.com
 - Dan Brown*, Orange Village representative, 440-248-6005, dbrown@partnersenv.com
 - Keith McClintock*, Geauga Park District, 440-286-9516 x1108, kmcclintock@geaugaparkdistrict.org
 - Dick Kerber*: Cleveland Metroparks, 216-635-3245, rjk@clevelandmetroparks.com
 - Michelle Johnson*, NOACA, 216-241-2414, mjohnson@mpo.noaca.org
 - Matt Hills*, Behnke Associates, 216-589-9100, mhills@behkeassoc.com
 - Steve Latkovic*, South Russell Multipurpose Trail Foundation, 440-552-7018, steve.latkovic@cbre.com
 - Mayor Susan Renda*, Moreland Hills, 440-248-1188, srenda@morelandhills.com
 - Vince Opaskar, former Bainbridge official, vinochem@aol.com
 - George Quay, Bainbridge resident

- Not in attendance; will be copied:
- Mayor Leonard Spremulli*, Village of Bentleyville, 440-247-5055, lspremulli@villageofbentleyville.com
 - Mayor Kathy Mulcahy*, Orange Village, 440-498-4400, mulcahyk@orangevillage.com

1. Public Workshop Schedule:
- a. 7:00-7:10: Participant and stakeholder sign in. There will be name tags for all stakeholders.
 - b. 7:10-7:40: Presentation
 - c. 7:40-8:10: Group discussion. We request that stakeholders present at the meeting find a group without a stakeholder, and facilitate and take notes about the group's discussion, relative to the survey questions. A map and copies of the survey will be at each of ten tables.
 - d. 8:10-8:25: Groups report back to everyone, briefly.

http://blog.cleveland.com/chagrinsolonsun/print.html?entry=/2010/03/chagrin_falls_other_... 3/30/2010

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Principals:
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Thomas F. Zarfass
P. Jeffrey Knapp

Landscape Architecture
Planning



e. 8:25-8:30: Next steps in the planning process. Next public meeting will be

2. **Existing Conditions Map Discussion:** The stakeholders reviewed the large existing conditions map, and requested additional information be shown:
 - a. The former interurban railway route.
 - b. Existing foot trails in South Russell Village Park.
 - c. Bike lanes, all-purpose trails, and sidewalks proposed by the Orange Bike Route Report, the Solon Bicycle Facilities Plan, and the Chagrin Falls Safe Routes to School 2009 School Travel Plan.
3. **Public Meeting Presentation:** Matt Hills previewed the presentation for the public meeting scheduled for April 27. Stakeholders can access the presentation draft at www.behnkeassoc.com/download/1002/CFRATStakeholderPresentation2.zip. Stakeholder comments included:
 - a. **Regional Context:** Explain the potential connection between the study area and the Shaker Boulevard APT / Shaker Lakes / Harrison Dillard Bikeway / Cleveland Lakefront Bikeway more clearly.
 - b. **Existing Studies:** Show the studies' recommendations that are relevant the CFRATS, graphically.
 - c. **NOACA Bicycle Priority Roadways:** Michelle Johnson noted this project may add roadways to NOACA's Priority Roadway Plan.
 - d. **Land Use:** A Frohing Meadows parcel was not shown as parks/open space. Change to green.
 - e. **Connections:** Mention all parks in public meeting presentation, to include all stakeholders.
 - f. **Chagrin Falls Sidewalks:**
 - i. Consider inverting NOACA's sidewalk inventory, as supplemental information.
 - ii. Show the Safe Routes to School Plan's proposed sidewalk improvements.
 - g. Make sure all references to bike paths are labeled "All Purpose Trails".
4. **Existing Conditions and Opportunities & Constraints Survey:**
 - a. The group reviewed the proposed survey (following these minutes,) and made the following comments:
 - i. Explain why a postal address is necessary.
 - ii. Ask the question: "What do you want to be able to do, from an alternative transportation standpoint? What do you want to see come out of this study?"
 - iii. Add to questions 4 and 6: "How often?"
 - b. The group agreed it would be a good idea to make the survey available via email.
5. **Project Blog:** Matt informed the group that Mountain Road Cycles has offered to develop a weblog for the project. Matt asked if anyone had any comments on this concept. Steve Latkovic wanted to view it, before accepting it, in order to make sure there was no potential for public relations issues for the project. Steve later viewed, and took no exceptions to it.

Since the stakeholder meeting, Chagrin Falls has taken the lead on making information about, and maps and presentations for the project available on its website. It has also provided a link on its site to the blog.

6. **Additional Comments:**
 - a. Solon has a bicycle facility plan that calls for developing the abandoned rail line that goes through South Franklin Circle. Show this proposed all purpose trail on the Existing Conditions plan.
 - b. Matt asked if a recommendation for bicycle racks was desirable. The answer was yes. This recommendation will be made in the Concept Plan phase.
 - c. The topic of how all purpose trails affect property values was discussed. Matt Hills has some information on this, and Michelle Johnson will send Matt some files she has on the topic, also. This topic will be revisited in the Concept Plan phase.

If any recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hills by May 7, or these minutes will be considered factually correct.

COPY TO: All stakeholders

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Principals:
Lee Behnke
Thomas F. Zarfoss
P. Jeffrey Knapp
Landscape Architecture
Planning



Chagrin Falls Region Alternative Transportation Study
Existing Conditions and Opportunities & Constraints Survey

April 27, 2010

Thank you for attending tonight's public workshop. We value all of your comments. Please take a moment to complete the following survey, so we can better understand your alternative transportation needs and requests.

1. What is your first name and last initial?
2. Do you live in the study area as it is shown on the existing conditions map?
3. What is your postal address?

4. What type(s) of alternative transportation do you use? (Check all that apply.)

- | | | |
|----------------------------------|--|---|
| ☐ Walking | ☐ Leisure cycling | ☐ Horseback riding |
| ☐ Hiking | ☐ Moderate cycling | |
| ☐ Running | ☐ Strenuous cycling | |

5. How many other members of your household use some form of alternative transportation currently?

6. For what reasons do you use the above forms of transportation? (Check all that apply.)

- | | | |
|-----------------------------------|-----------------------------------|---|
| ☐ Pleasure | ☐ Exercise | ☐ School Commuting |
| | | ☐ Work Commuting |
| | | ☐ Shopping Commuting |

7. What destinations do you travel to when you use alternative transportation?



Appendix A: Stakeholder Meeting Minutes

8. What route(s) do you take currently to those destinations currently? Please draw them on the map at your table, LABELED WITH YOUR INITIALS AND "E.R." (for "existing route")
9. Is there a different route you would prefer to take, if it were available to you? Please draw it on the map at your table, LABELED WITH YOUR INITIALS AND "P.R." (for "preferred route")
10. What problems/deficiencies within the project's study area prevent or discourage you from using alternative transportation more?
11. If these problems were fixed, would you use alternative forms of transportation more?
12. Do you have any concerns about anything related to tonight's discussion?
13. Please list any additional comments below.

Thank you for your participation!

B E H N K E

B

MEMO

TO: City of Chagrin Falls

DATE: May 31, 2010

ATTN: Ben Himes

PROJECT: C.F. Region Alt. Transportation Study (Cfrats)

RE: 5-19-10 Stakeholder Meeting #3

PROJECT NO: 1002

EMAIL: ben@chagrin-falls.org

NO. of PAGES: 2 (including cover)

FROM: Matt Hills

☐ Hard copy to follow

COMMENTS:

- Attendees (Stakeholders marked with *):
- Mayor Tom Brick*, Village of Chagrin Falls, 440-247-8399, mayorbrick@chagrin-falls.org
 - Ben Himes*, Village of Chagrin Falls, 440-247-5050, ben@chagrin-falls.org
 - Greg Hopkins*, Village of Chagrin Falls Hike-Bike, 216-401-1121, ghopkins@signaturedevelopmentgroup.net
 - Bill Koons*, South Russell Village, 440-338-1524, wnek3@roadrunner.com
 - Dan Brown*, Orange Village representative, 440-248-6005, dbrown@partnersenv.com
 - Michelle Johnson*, NOACA, 216-241-2414, mjohnson@mpo.noaca.org
 - Matt Hills*, Behnke Associates, 216-589-9100, mhills@behkeassoc.com
 - Steve Latkovic*, South Russell Multipurpose Trail Foundation, 440-552-7018, steve.latkovic@cbre.com
 - Vince Opaskar, former Bainbridge official
 - George Quay, Bainbridge resident

- Not in attendance; will be copied:
- Mayor Leonard Spremulli*, Village of Bentleyville, 440-247-5055, lspremulli@villageofbentleyville.com
 - Mayor Kathy Mulcahy*, Orange Village, 440-498-4400, mulcahyk@orangevillage.com
 - Mayor Matt Brett*, South Russell Village, 440-338-6700, mbrett@sage-aquest.com
 - Keith McClintock*, Geauga Park District, 440-286-9516 x1108, kmcclintock@geaugaparkdistrict.org
 - Dick Kerber*: Cleveland Metroparks, 216-635-3245, rik@clevelandmetroparks.com
 - Mayor Susan Renda*, Moreland Hills, 440-248-1188, srenda@morelandhills.com

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Planning



1. **Preliminary Concept Plan Discussion:** The stakeholders reviewed the preliminary concept plan, and made the following comments:

- a. Due to the large amount of information shown on the map, Mayor Brick requested the various types of routes be shown on separate maps, for more clarity. Behnke will do this in the overall study report.
- b. Move the bike lanes along 306 (to the west footpath entry into West Woods,) to along Music, east of 306, to the south footpath entry into West Woods. Several stakeholders were concerned about heavy and fast vehicular traffic on 306.
- c. Along Bell Street, immediately east of 306, show an APT through the Kensington development's 306 frontage as an option.
- d. Matt discussed current conversations with First Energy, regarding using their corridor for an APT. First Energy would like a commitment from the Whitetail Run Community, stating Whitetail will allow an APT through their property, before First Energy will allow an APT along their corridor. Greg Hopkins and Steve Latkovic stated they knew people in the development, and would begin reaching out to them.
- e. Since horseback riders currently have an agreement with FirstEnergy to ride along FirstEnergy's transmission corridor, a bridal trail should be shown in conjunction with the proposed APT.
- f. Some people felt the connection on Solon Road between the east end of the proposed APT and the existing sidewalks should be clearer. Behnke clarified this with a note on the plan.
- g. Show the sidewalks proposed by Chagrin Falls Safe Routes to School (CFSRTS) more clearly. Behnke used a new symbol for them.
- h. Remove the proposed signed shared roadway along SOM Center, since the vehicular volume and speed make it feel unsafe, and since it does not connect any significant destinations.
- i. South Russell Village Park and Founders Field are good locations to show proposed trailheads.
- j. Dan Brown proposed a connection from the Lander Road APT to the Orange Schools campus, via Harvard Road and the service drive through Hiram House Camp property. Since the stakeholder meeting, Matt has spoken with Philip Dickinson, Director of Operations and Business Services at Orange Schools. Mr. Dickinson advised that Hiram House Camp would not like the connection running through their property; he has a few other ideas of other routes from Lander Road, which Matt will discuss further with Mr. Dickinson.

2. **Public Meeting Presentation:** Matt Hils previewed the presentation for the public meeting scheduled for May 25. Stakeholders can access the presentation draft at www.behnkeassoc.com/download/1002/CFRATSSStakeholderPresentation3.zip. Stakeholder comments included:

- a. **Design Standards:** Make it clear in the public presentation and in the final report that the standards are based on federal funding, and if an all purpose trail, for instance, were funded by non-federal dollars the standards would not need to be adhered to strictly. Matt pointed out the purpose of the standards is for the safety of the users and non-users who have to interact with the non-motorized facility.
- b. **Miles Road APT:** Dan Brown questioned the need for an APT along Miles Road, since it is parallel and relatively close to the Bedford Chagrin Parkway, which many cyclists use as a conduit to and from Chagrin Falls. Matt responded that the Miles APT would most likely be listed as a lower priority on the recommendations list.
- c. **Bike Lanes:** Several people commented on the use of bike lanes by non-cyclists, particularly in the winter, when the snow is plowed from bike lanes, and parallel sidewalks are not cleared.
- d. **Property Acquisition:** Matt noted that all suggested routes shown on the concept plan will not require property acquisition, as the need for acquiring property very often halts a project.
- e. **Education Program:** Coordinate education recommendations with the education recommendations made in the CFSRTS plan.

If a recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hils by June 4, or these minutes will be considered correct and complete.

COPY TO: All stakeholders

OFFICE USE: ☐ Fax sent ☐ Hard copy sent

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Appendix A: Stakeholder Meeting Minutes

B E H N K E



MEMO

TO: City of Chagrin Falls
ATTN: Ben Himes
RE: 6-23-10 Stakeholder Meeting #4
EMAIL: ben@chagrin-falls.org
FROM: Matt Hils

DATE: July 9, 2010
PROJECT: C.F. Region Alt. Transportation Study (Cfrats)
PROJECT NO: 1002
NO. of PAGES: 2
(including cover)
☐ Hard copy to follow

COMMENTS:

- Attendees (Stakeholders marked with *):
- Mayor Tom Brick*, Village of Chagrin Falls, 440-247-8399, mayorbrick@chagrin-falls.org
 - Ben Himes*, Village of Chagrin Falls, 440-247-5050, ben@chagrin-falls.org
 - Greg Hopkins*, Village of Chagrin Falls Hike-Bike, 216-401-1121, ghopkins@signaturedevelopmentgroup.net
 - Bill Koons*, South Russell Village, 440-338-1524, wnek3@roadrunner.com
 - Dan Brown*, Orange Village representative, 440-248-6005, dbrown@partnersenv.com
 - Michelle Johnson*, NOACA, 216-241-2414, mjohnson@mpo.noaca.org
 - Matt Hils*, Behnke Associates, 216-589-9100, mhils@behnkeassoc.com
 - Steve Latkovic*, South Russell Multipurpose Trail Foundation, 440-552-7018, steve.latkovic@cbre.com
 - Mayor Matt Brett*, South Russell Village, 440-338-6700, mbrett@sage-quest.com
 - Mayor Susan Renda*, Moreland Hills, 440-248-1188, srenda@morelandhills.com
 - Rick Smith, South Russell Multipurpose Trail Foundation, 440-247-8650, smitharchch@aol.com
 - Keith McClintock*, Geauga Park District, 440-286-9516 x1108, kmcclintock@geaugaparkdistrict.org
 - Wendy Gillund, Village of Bentleyville
 - George Quay, Bainbridge resident

- Not in attendance; will be copied:
- Mayor Leonard Spremulli*, Village of Bentleyville, 440-247-5055, lspremulli@villageofbentleyville.com
 - Mayor Kathy Mulcahy*, Orange Village, 440-498-4400, mulcahyk@orangevillage.com
 - Dick Kerber*: Cleveland Metroparks, 216-635-3245, rik@clevelandmetroparks.com

1. **Transportation Enhancement Funding:** Michelle Johnson notified all attendees that Transportation Enhancement Funding will be available through NOACA, and applications are due on July 30. A request was made for Behnke to recommend a list of potential Chagrin Falls Region Alternative Transportation projects that would be eligible for the funding. Behnke created the list, and sent it to all stakeholders.
2. **Public Meeting Presentation:** Matt Hils previewed the presentation for Public Meeting #3, scheduled for July 6. Stakeholders can access the presentation draft at www.behnkeassoc.com/download/1002/CFRATSPublicMeeting3Presentation--SH.pdf. Stakeholder comments included:
 - a. **Changes since the Preliminary Plan:** Matt highlighted changes to the Preliminary Concept Plan as a result of input from the stakeholders and public meeting #2.

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- b. **East Washington Street:** The stretch of East Washington, from the Chagrin Falls border to the First Energy corridor, was discussed, regarding the best route types for the conditions. It was agreed that Steve Latkovic, Mayor Brett, and Greg Hopkins would examine the stretch closely, and make their recommendations.
 - c. **Bridge alterations:** On three bridges where bike lanes are proposed for both ends, Behnke proposed the option of lowering the existing raised sidewalks on the bridge, flush with the existing roadway, to continue the bike lanes across the bridge. The bridges are the Miles Road bridge by Chagrin River Road, the Solon Road bridge by Chagrin River Road, and the Chagrin Boulevard bridge. Michelle Johnson questioned whether this is legal, since the concept "eliminates" the sidewalks from the bridges, and removes the facility for pedestrians. A day or so after the meeting, Michelle informed Matt that the county engineer invested heavily in the Miles and Solon bridges not long ago, and would not be willing to spend more money on them, in modifications. Regarding the Chagrin Boulevard bridge, the report will recommend the modifications be a lower priority. For all three bridges, the report will recommend a signed shared roadway across them.
 - d. **Bike Station:** Dan Brown suggested the concept of a bike station in downtown Chagrin Falls. The components for a bike station that the group concluded make sense are parking facilities, running water for drinking, an information center/welcome kiosk, and possibly a maintenance station, if a local bike shop were interested.
3. **Recommendations:** The group reviewed Behnke's prioritized list of recommendations. The group suggested clarifications, and two shifts in priority level were made.

If a recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hills by July 16, or these minutes will be considered correct and complete.

COPY TO: All stakeholders

OFFICE USE: ☐ Fax sent ☐ Hard copy sent

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Appendix B: Public Meeting Minutes

B E H N K E



MEMO

TO: City of Chagrin Falls **DATE:** May 11, 2010

ATTN: Ben Himes **PROJECT:** C.F. Region Alt. Transportation Study (Cfrats)

RE: 4-27-10 Public Meeting #1 Updated 4-27-10 **PROJECT NO:** 1002

EMAIL: ben@chagrin-falls.org **NO. of PAGES:** 58 (including cover)

FROM: Matt Hills ☐ Hard copy to follow

COMMENTS:

Attendees: See sign-in sheet, Attachment 'A'

1. Matt Hills started the meeting at 7:10 PM by introducing himself and Behnke Associates. He then proceeded with a PowerPoint Presentation (download at www.behnkeassoc.com/download/1002/CFRATSPublicMeeting1Presentation.pdf, or the Chagrin Falls website,) that focused on the following:
 - a. What is the study and its purpose?
 - b. What is the process?
 - c. Definitions
 - i. Who are the users?
 - ii. All Purpose Trail
 - iii. Bike Lane
 - iv. Sharrow
 - v. Signed Shared Road
 - vi. Trail Types
 1. Sidewalks
 2. Gravel, mulch, or grass trails
 3. All purpose trails
 - d. Existing Conditions
 - i. Study Area
 - ii. Regional Context
 1. Complete portions of trail networks
 - a. Emerald Necklace Loop
 - b. Shaker Boulevard trail→Future Lakes to Lake Trail→Harrison Dillard Bikeway→Cleveland Lakefront Bikeway
 2. Regional destinations around study area
 - a. The West Woods Reservation
 - b. Frahring Meadows Reservation
 - c. South and North Chagrin Reservations
 - iii. Existing Studies and Plans
 1. Orange Village Bikeway Study
 2. Chagrin Falls Safe Routes to School Plan

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4. NOACA Bicycle Priority Roadways
 - iv. Road Classifications & Traffic Counts
 - v. Slopes
 - vi. Land Use
 - vii. Connections
 - viii. Current Trails and Routes
 - ix. Cycling Club Routes
 - x. Village of Chagrin Falls Sidewalks
- e. Opportunities & Constraints
 - i. Vehicular Traffic
 1. Volumes
 2. Speed
 - ii. Topography & Slopes
 - iii. Current conditions within the Right of Way and the road
 - iv. Chagrin River & Tributaries
 - v. Chagrin River Road
 - vi. Transmission Line Corridor
 - vii. Railroad Corridor
 - viii. Chagrin Falls Sidewalks
 - ix. Local History
2. The next portion of the meeting consisted of everyone breaking down into groups of 4-8 people each to discuss the questions on the blank survey shown in Attachment 'B'. For the purpose of recording the meeting's events and input, Attachment 'C' shows all surveys returned at the meeting. A full tally of these paper surveys and the online surveys will be in the Interim Report for the Existing Conditions and Opportunities & Constraints stage of the study. At the end of the discussion period, each group summarized its conversation and conclusions in a 2 minute presentation to the overall group. Notes from these presentations are as follows:
 - a. Table #1:
 - i. People at table from Chagrin Falls Township and Bainbridge.
 - ii. Uses current trails mainly for exercise.
 - iii. Would use trails and routes more for destination type trips if facilities were expanded and more convenient.
 - iv. Participates in weekly cycling group that meets at the Cleveland Metroparks (group does different ride each week.)
 - v. Some people leave from home on bicycle, some take bike(s) to starting point.
 - vi. Used to go to Chagrin Falls for ice cream with children; not any more, with children grown up.
 - vii. Very interested in seeing the study's recommendations implemented ASAP!
 - viii. All people at table were in favor of expanding the trail network.
 - ix. Main goal: connectivity.
 - b. Table #2:
 - i. Make the River Road bridge that is currently out covered pedestrian only bridge.
 - ii. Interested in the potential for using the power line corridor for trails
 - iii. Consider how cross county skiing fits into the plan.
 - iv. The Buckeye Trail, a hiking trail that connects four corners of Ohio, goes through the study area. Behnke will look into its alignment through the study area.
 - v. Potential to tie in with golf courses
 - vi. Connect to a variety of parks without having to use heavy traffic routes, and without having to drive.
 - vii. Chagrin Falls works well as a hub within the study area network.
 - viii. Connect from West Woods through South Russell Park to ??? Rock.
 - c. Table #3:
 - i. Members of the Cleveland Hiking Club
 - ii. Trails should co-exist with bridal usage wherever possible.
 - iii. All individuals at the table were very supportive of developing more non-motorized transportation facilities.



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Tom Rathbone	255 Manor Brook South Rustic	TOMRATHBONE@aol.com
JEFF HOMANS	505 N MAIN ST, CF	JEFF_HOMANS@VERIZON.COM
Dick Schiefel	620 Edgewood Ct	rlschiefel@schlegelbal.net
Frank Sincaglia	18 Daisy Ln	FRANKFPS@ROADRUNNER.COM

Name	Postal Address	Email Address
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Lathyrus Gilling	7774 Country Lane CF 44023	
Gary Welch	84 S. Main CF 44022	gwelch@aol.com
Steve Latkovic	1112 Sheerbrook Dr	



Name

Wendy Billund 35114 Cannon Rd Bentleyville 44022 wbillund@aatt.net



Chagrin Falls Region Alternative Transportation Study
Existing Conditions and Opportunities & Constraints Survey
 Behnke Associates, Inc.
 April 27, 2010

Thank you for attending tonight's public workshop! We value all of your comments. Please take a moment to complete the following survey, so we can better understand your alternative transportation needs and requests.

1. What is your first name and last initial? (We request this so we can tie your survey answers to comments you draw/write on the map.)
2. Do you live in the study area shown on the existing conditions map?
3. What is your postal address? (We request this so we understand where you begin your trips.)

4. What type(s) of alternative transportation do you currently use and how often? (Check all that apply.)

	3x/week or more	1x/week	Monthly	Less than Monthly
Walking				
Hiking				
Running				
In-line Skating				
Family Cycling				
Leisure Cycling (basic skills)				
Moderate Cycling (moderate skills)				
Strenuous Cycling (advanced skills)				
Horseback Riding				

5. For what reasons do you use the above forms of transportation? (Check all that apply.)

Pleasure	
Exercise	
To get to school	
To get to work	
To run errands	



B E H N K E



MEMO

TO: City of Chagrin Falls **DATE:** June 10, 2010

ATTN: Ben Himes **PROJECT:** C.F. Region Alt. Transportation Study (Cfrats)

RE: 5-25-10 Public Meeting #2 **PROJECT NO:** 1002

EMAIL: ben@chagrin-falls.org **NO. of PAGES:** 10
(including cover)

FROM: Matt Hills ☐ Hard copy to follow

COMMENTS:

- Attendees:** See sign-in sheet, Attachment 'A'
1. Matt Hills started the meeting at 7:05 PM by introducing himself and Behnke Associates. He then proceeded with a PowerPoint Presentation (download at www.behnkeassoc.com/download/1002/CFRATSPublicMeeting2Presentation.pdf.) that focused on the following:
- a. What is the study and its purpose?
 - b. What is the process?
 - c. Definitions
 - i. Who are the users?
 - ii. All Purpose Trail
 - iii. Bike Lane
 - iv. Signed Shared Road
 - v. Sharrow
 - vi. Trail Types
 - 1. Sidewalks
 - 2. Gravel, mulch, or grass trails
 - 3. All purpose trails
 - vii. Trail Head
 - d. Existing Conditions
 - i. Study Area
 - ii. Regional Context
 - 1. Complete portions of trail networks
 - a. Emerald Necklace Loop
 - b. Shaker Boulevard trail→Future Lakes to Lake Trail→Harrison Dillard Bikeway→Cleveland Lakefront Bikeway
 - 2. Regional destinations around study area
 - a. The West Woods Reservation
 - b. Frohring Meadows Reservation
 - c. South and North Chagrin Reservations
 - iii. Local destinations within the study area
 - iv. Current Trails and Routes

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Principals:
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6. How many other members of your household currently use some form of alternative transportation?
7. What destinations do you travel to when you use alternative transportation?
8. What route(s) do you take currently to those destinations currently? PLEASE DRAW IT ON THE MAP AT YOUR TABLE, LABELED WITH YOUR INITIALS AND "E.R." (for "existing route")
9. Is there a different route you would prefer to take, if it were available to you? PLEASE DRAW IT ON THE MAP AT YOUR TABLE, LABELED WITH YOUR INITIALS AND "P.R." (for "preferred route")
10. What problems/deficiencies within the project's study area prevent or discourage you from using alternative transportation more?
11. If these problems were fixed, would you use alternative forms of transportation more?
12. What do you want to see happen in this region, as a result of this study?
13. Do you have any concerns about anything related to tonight's discussion?
14. Please list any additional comments below.

 Thank you for your participation! Please place your completed survey at the door as you leave tonight. 

Know someone interested who was not able to make it tonight? Go to www.srtrails.org to complete this survey, by May 2nd.

Have additional thoughts? Blog us at <http://sites.google.com/site/chagrinfallswalkandbike>



- v. Cycling Club Routes
- vi. Local Users' Routes
- e. Public Input From Existing Conditions Stage of Study
 - i. User Survey Results
- f. Preliminary Concepts
 - i. Bicycle (and other non-motorized users) Facility Suitability Determination Process
 - 1. Is there room for an all purpose trail (APT)?
 - 2. APT Design Standards
 - 3. If there is room, are there significant conflicts?
 - ii. Proposed APT locations
 - 1. Cleveland Metroparks Considerations
 - 2. Floodplains and Wetlands
 - 3. Coordination with existing bridal trails
 - 4. First Energy Corridor
 - iii. Bike Lanes
 - 1. If APT not feasible, is there room for bike lanes?
 - 2. Bicycle Compatibility Index
 - 3. Bicycle Compatibility of existing main roads in study area
 - 4. Proposed Bike Lane locations
 - 5. Bike Lanes' positive effect on roads' bicycle compatibility
 - iv. Signed, Shared Roadways
 - 1. Proposed locations
 - 2. Proposed locations of Sharrows
 - v. Proposed sidewalks
 - vi. Historic & Natural Features Circuit
- g. Other Considerations
 - i. Bicycle Accidents
 - ii. Institute Public Education Program
 - iii. Proposed Trailhead Locations
 - iv. Bicycle Facilities' Impact on Property Value

2. The next portion of the meeting consisted of open questions and conversation among the entire group. Questions and comments were as follows:

- a. On Bell Street, immediately east of 306, there is plenty of room for an APT along the Kensington Green area. Show an APT meandering through the greenspace frontage along 306. A couple stakeholders volunteered to work with the Kensington Green group, to see if they will permit an APT through their property.
- b. Can users other than bicyclists (walkers, runners, etc) use bike lanes? Several people responded at the meeting that they have observed pedestrians using bike lanes.
PER PEDESTRIAN LAWS FROM THE OHIO REVISED CODE: *"Where a sidewalk is provided and its use is practicable, pedestrians shall not walk along or upon the adjacent roadway. Where a sidewalk is not available, pedestrians walking along and upon a highway shall walk only on a shoulder, as far as practicable from the edge of the roadway. Where neither sidewalk nor shoulder is available, pedestrians shall walk as near to the outside edge of the roadway and only on the left side of the roadway, facing traffic. Any pedestrian upon a roadway shall yield the right-of-way to all vehicles upon the roadway."*
- c. There needs to be an enforcement role for police as part of any safety and public education program.
- d. A question was asked about the portion of the abandoned railroad Right of Way in Solon. That section is not in the study area.
- e. A question regarding property acquisition arose. To date, the plan has recommended all alternative transportation (AT) facilities be located within public property or Rights of Way, except for the segment of APT along the First Energy corridor that runs through the Whitetail Run Community, and the APT requested in note 'a', above.
- f. Can some type of facility/improvement be made on Bentleyville Road for non-motorized use? Even a gravel footpath would be satisfactory to the resident asking the question. What are the issues related to the one lane section of road?

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- g. Can the Chagrin Falls well field on East Washington be used as a trail route? Behnke is looking into this, with Chagrin Falls Village authorities.
- h. Cell phone use (texting and talking,) should not be allowed in Chagrin Falls as a safety measure.
- i. One meeting participant estimated there are approximately 16,500 residents in the study area.
- j. AT planning will be important for securing future funding, and is one of the main purposes of this study.
- k. Solon Road needs repaving. Could a bike lane be part of that project? Does it make sense to do a bike lane now instead of waiting for an all-purpose trail that may take years to accomplish? Behnke response: An all purpose trail is the safest, most desirable AT solution, but since funds for road improvements can be used for bike lane implementation, whereas separate funds are necessary to build APT's, it may be desirable to the community to implement the bike lanes sooner than if the community waited for an APT to be built. The report will discuss this issue, and Behnke will compare bike lanes with an APT on Solon, but the decision will ultimately be up to the community and its leaders.
- l. Some roads have edge lines in some areas and no edge lines in others. Edge lines are helpful to bikers.
- m. Who is responsible for plowing, painting and general maintenance of bike lanes and other alternative transportation improvements? What is the source of funds for proposed improvements?
- n. Chagrin River Road from the Hunting Valley line to the North is not safe. This is outside the study area.
- o. A Miles Road resident stated Miles Road is very busy.
- p. One participant stated the Chagrin Boulevard bike lanes should be a lower priority, since it was his/her opinion the road is too busy to be an attractive route to most users.
- q. There are many different user types for alternative transportation. The study should identify the different users (completed in the Existing Conditions stage of the project,) develop strategies for each type (started in the current stage,) and prioritize improvements based on each user group's needs (Next stage.)
- r. The section of Route 87, between Falls and Russell should be shown as a signed, shared roadway.
- s. Bainbridge Councilman Matt Lynch asked what number of residential properties are "impacted" by the plan in Bainbridge. Behnke sent the following email two days later:

"Mr. Lynch:

The proposed concept plan you saw on Tuesday night for the Chagrin Falls Region Alternative Transportation Study proposes installing bike lanes along three roads in Bainbridge: Franklin, Chagrin, and Washington. (Just so I know we are on the same page with terminology, I have attached a slide from the presentation that shows a bike lane, which is a striped lane on the road, not a separate path off of the road.)

Per your request after the meeting, we have counted the number of residential parcels along each of the three roads. These numbers are according to the Geauga County Geographical Information System, and are not necessarily indicative of how many different residential owners there are along each road (some parcels may be owned by the same individual.)

- 1. *On the east side of Franklin, between the Chagrin Falls boundary and Holbrook: 61.*
- 2. *On both sides of Chagrin, between the Chagrin Falls boundary and Savage: 77.*
- 3. *On both sides of Washington, between the Chagrin Falls boundary and the First Energy transmission corridor: 12."*

The Interim Report #2 will have additional discussion of the study's recommendations for Bainbridge.

- t. Show bike lanes on Route 306, from Music to West Woods, as an alternate to the bike lanes shown along Music, since the Music bike lanes are 2 to 3x as long, and Music gets hilly, east of 306. This alternate was shown as the preferred route before Public Meeting #2, but some stakeholders were concerned about the high vehicular volume and speed along 306.
3. Multiple copies of the Preliminary Concept Plan were laid on the tables at the meeting for reference and as an opportunity for participants to write and draw comments on the maps. Comments made on the plans are as follows:
- a. Wendy Gillund, from the Village of Bentleyville, requested a survey asking about the desirability of a new footbridge over the Chagrin River, along Chagrin River Road, between Solon Road and Miles. Behnke developed and sent the survey. See Attachment 'B'.
 - b. Horse trail through South Franklin Circle Community should not have been all paved.
 - c. Preserve existing bridal trails—do not pave.

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P. Jeffrey Knapp

Landscape Architecture
Planning

Appendix B: Public Meeting Minutes

Chagrin Falls Region Alternative Transportation Study—Final Report



- If any recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hills by June 18, or these minutes will be considered correct and complete.

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Chagrin Falls Region Alternative Transportation Study
Public Meeting #2
March 25, 2010

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Judy Kinner			JKinner382@qmail.com



Sign in Sheet

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Sign in Sheet

[illegible]

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Chagrin Falls Region Alternative Transportation Study
Chagrin River Road Pedestrian Bridge Survey
Behnke Associates, Inc.

The goal of the Chagrin Falls Region Alternative Transportation Study is to determine how to enhance the region's quality of life and economic viability by creating a more complete network of non-motorized routes and trails with improved safety and connections to key community and regional resources.

One item the study is examining is the construction of a bicycle- and pedestrian-only bridge on Chagrin River Road, between Solon Road and Miles Road, in the location of the former vehicular bridge over the Chagrin River. The bridge would not be for vehicular use. Your participation in the following survey will help us better understand your opinion on this issue.

PLEASE SUBMIT YOUR COMPLETED SURVEY BY FRIDAY, JUNE 11.

1. Do you live in Bentleyville?

☐ YES

☐ NO

2. Do you favor or oppose the construction of a bicycle- and pedestrian-only bridge?

☐ FAVOR

☐ OPPOSE

3. For what reasons do you favor or oppose the pedestrian-only bridge?

Thank you for your participation.

Submit by Email

B E H N K E

B

MEMO

TO: City of Chagrin Falls

DATE: July 9, 2010

ATTN: Ben Himes

PROJECT: C.F. Region Alt. Transportation Study
(Cfrats)

RE: 7-6-10 Public Meeting #3

PROJECT NO: 1002

EMAIL: ben@chagrin-falls.org

NO. of PAGES: 8
(including cover)

FROM: Matt Hills

☐ Hard copy to follow

COMMENTS:

Attendees: See sign-in sheet, Attachment 'A'

1. Matt Hills started the meeting at 7:05 PM by introducing himself and Behnke Associates. He then proceeded with a PowerPoint Presentation (download at www.behnkeassoc.com/download/1002/CFRATSPublicMeeting3Presentation--PM.pdf.) that focused on the following:
 - a. What is the study and its purpose?
 - b. What is the process?
 - c. Definitions
 - i. Who are the users the study is intended to serve, and what purposes do they use alternative transportation for?
 - ii. All Purpose Trail
 - iii. Bike Lane
 - iv. Sharrow
 - v. Signed Shared Road
 - vi. Trail Types
 1. Sidewalks
 2. Gravel, mulch, or grass trails
 3. All purpose trails
 - d. Study Area
 - e. Regional Context
 - f. Regional Connections
 - g. Local Connections
 - h. Current Trails and Routes
 - i. Cycling Club Routes
 - j. Local Users' Routes
 - k. Modifications to Preliminary Concept Plan
 - l. Potential Bridge Modifications
 - i. Chagrin Boulevard
 - ii. Jackson Road
 - iii. Miles Road at Chagrin River Road
 - iv. Miles Road near Solon Road
 - v. Solon Road

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- m. Recommendations
 - i. Evaluation process
 - ii. User Groups
 - iii. High, Medium, and Low Priorities
- 2. Questions and discussion took place throughout the presentation. Participants made the following comments and asked the following questions:
 - a. The Franklin Circle development paved the portion of the bridal trail that is on Franklin Circle property during construction, but did not return a portion of the trail to bridal condition after construction, as was originally promised. Behnke explained that funding for the study does not cover studying or making recommendations for new bridal trails, and only proposes new bridal trails where a proposed all purpose trail (APT) impacts an existing bridal trail.
 - b. The FirstEnergy corridor should be developed for mountain bikes only, with an unpaved trail. A paved trail would take away from the natural feel of the corridor. Others commented the high tension wires and towers are very unnatural.
 - c. Who bears the cost of developing an APT? Answer: it depends on the type of funding: sometimes federal taxpayers, sometimes local taxpayers, sometimes private entities.
 - d. Many comments were made about the stretch of Miles Road between Chagrin River Road (CRR) and Solon Road. There was a lot of concern about some houses that are very close to the street currently, and how would the development of bike lanes affect those houses? Behnke will again examine this stretch closely, and review the potential impact that new alternative transportation (AT) facilities would have on the Miles Road residents. Behnke will continue to recommend the development of a facility along Miles between CRR and Solon Road, since that segment acts as a popular AT conduit between Chagrin Falls and South Chagrin Reservation.
 - e. What are the standards APT's and bike lanes are to be designed by? Behnke reviewed the standards for federally-funded facilities.
 - f. How does a guardrail impact the width of a bike lane, and if a bike lane were developed and a guardrail is needed, will there be any room left for pedestrians to walk? Are pedestrians allowed to use bike lanes? Answers:
 - i. Ohio law does not permit pedestrians to use bike lanes. Behnke will look into the local rules more, regarding this.
 - ii. If a guardrail is directly next to a bike lane, a 5' bike lane is necessary.
 - iii. Typically, ODOT calls for guardrails along curbed roads to be set back from the curbs a minimum of 2'.
 - iv. ODOT calls for guardrails along uncurbed roads to be set back from the road edge 6'-8', create a berm for troubled vehicles to pull onto. The bike lane can count as part of the berm, so there would be 2'-4' of unpaved space for pedestrians to walk on.
 - g. Many comments were made about Bell Street. The main message from most of the people with Bell Street comments was: We would like a trail on Bell, but do not want Bell to lose its rural feel, and do not want to lose large amounts of vegetation between the street and the residences.
 - h. Cyclists who do not obey the vehicular traffic laws should be ticketed by police. The same goes for vehicular drivers who drive dangerously around cyclists and pedestrians.
 - i. An estimate for installing a sidewalk along Mill Street from a few years back was for \$100,000, which is significantly more than the estimate shown in this study. Behnke will reexamine this estimate.
 - j. Did Behnke look at developing an AT facility on the abandoned railroad corridor between Chagrin Road and East Washington. Answer: yes; however, the Eagles Club property immediately northeast of Chagrin and the steep slope north of the Eagles Club are both major obstacles.
 - k. Is any land acquisition necessary? One of the study's goals is to avoid acquisition wherever possible.
 - l. The difference between planning and preliminary engineering and the steps following the completion of this study were explained:
 - i. Identify segment to implement
 - ii. Identify funding source for preliminary engineering, full engineering, and construction
 - iii. Preliminary engineering
 - iv. Full engineering

- v. Construction
- m. The bike station concept for downtown Chagrin Falls was discussed.
- n. How do the recommended improvements affect the local economy? In general, the proposed facilities are to not only help local residents, but to also attract more outside visitors. More visitors mean more money in the local economy. The affect of APT's on property values was also discussed.
- o. Is it legal to ride a bike on a sidewalk? Typically, yes, but local communities' laws vary.
- p. What is the premise of federal funding? Answer: There are many, but the main ones are:
 - i. Health and wellness
 - ii. Alternative transportation for better livability and less pollution
 - iii. Improving disadvantaged communities
- q. What are the pedestrian bridges? Answer: Prefabricated bridges, with 14' width for two-way traffic, and 6' for one-way traffic.
- r. The drainage structure grates on the Solon (Miles?) Road bridge are not bicycle-friendly. Contact the county

If a recipient of these meeting minutes finds any inaccuracies or missing information, please notify Matt Hills by July 16, or these minutes will be considered correct and complete.

COPY TO: All stakeholders

OFFICE USE: ☐ Fax sent ☐ Hard copy sent

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Appendix B: Public Meeting Minutes



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Sign in Sheet

[illegible]

Sign in Sheet

[illegible]

Chagrin Falls Region Alternative Transportation Study
Public Meeting #3
July 6, 2010

Sign in Sheet

[illegible]

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Christina Sakerbisky	62 Lyndale Rd 44020	216 757-9442	
Penny Passalacqua	34750 Forest St. Solon 44139	440-248-0156	
GARY MIKITTIN	1389 EASTON AVE AMFIELD 44004	216 393 2095	
MARY HEINZELMAN	924 Bell	440 247 0519	
MARTI RENZI	920 Bell	440 247-3523	
Margaret Vassari-Chad	389 Miles Rd	440 247-6816	
Jana Vojtenchuk	389 Miles Rd	(440) 247-6816	



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Appendix C: Existing Conditions

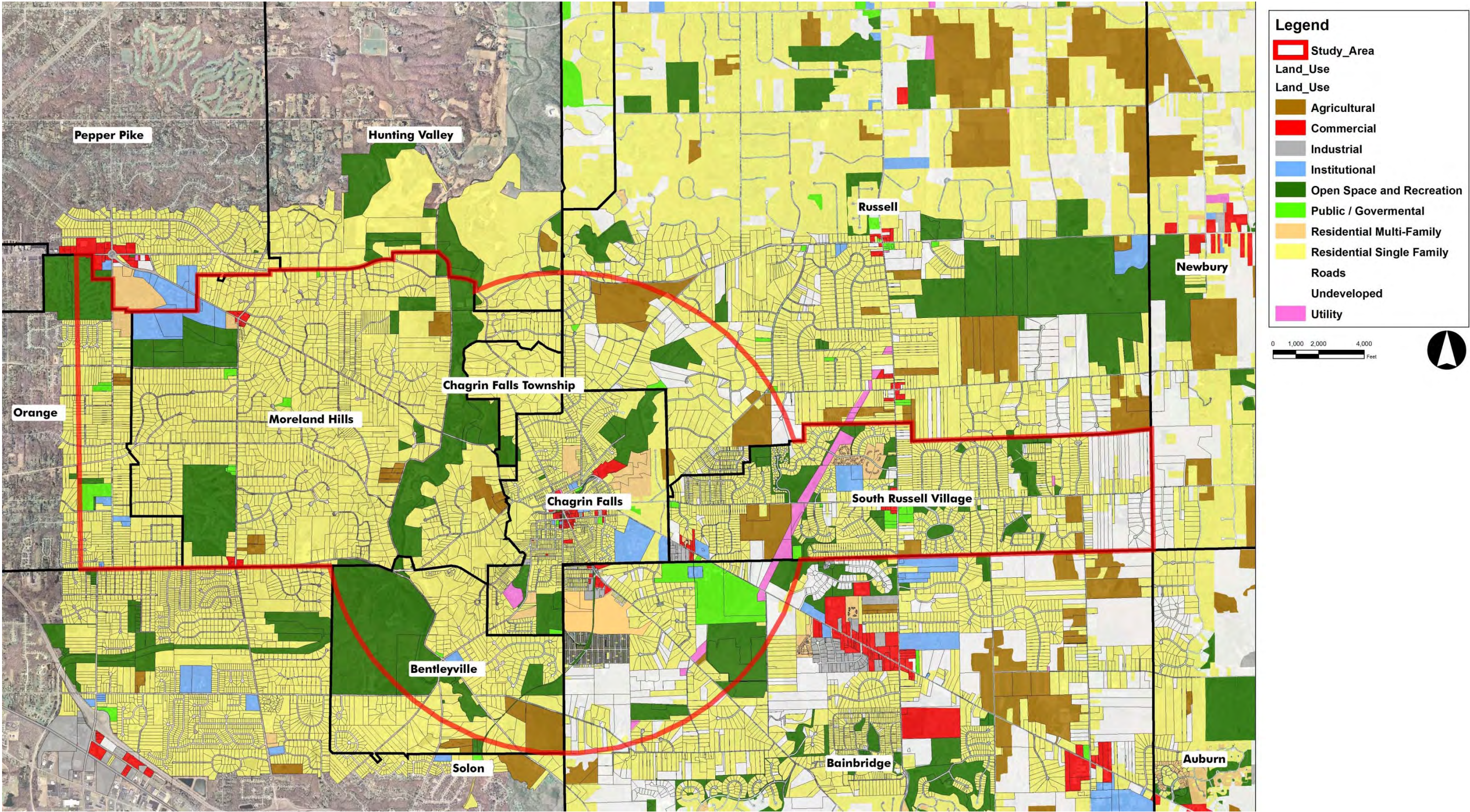


Figure 30: Land Use Map

Appendix C: Existing Conditions



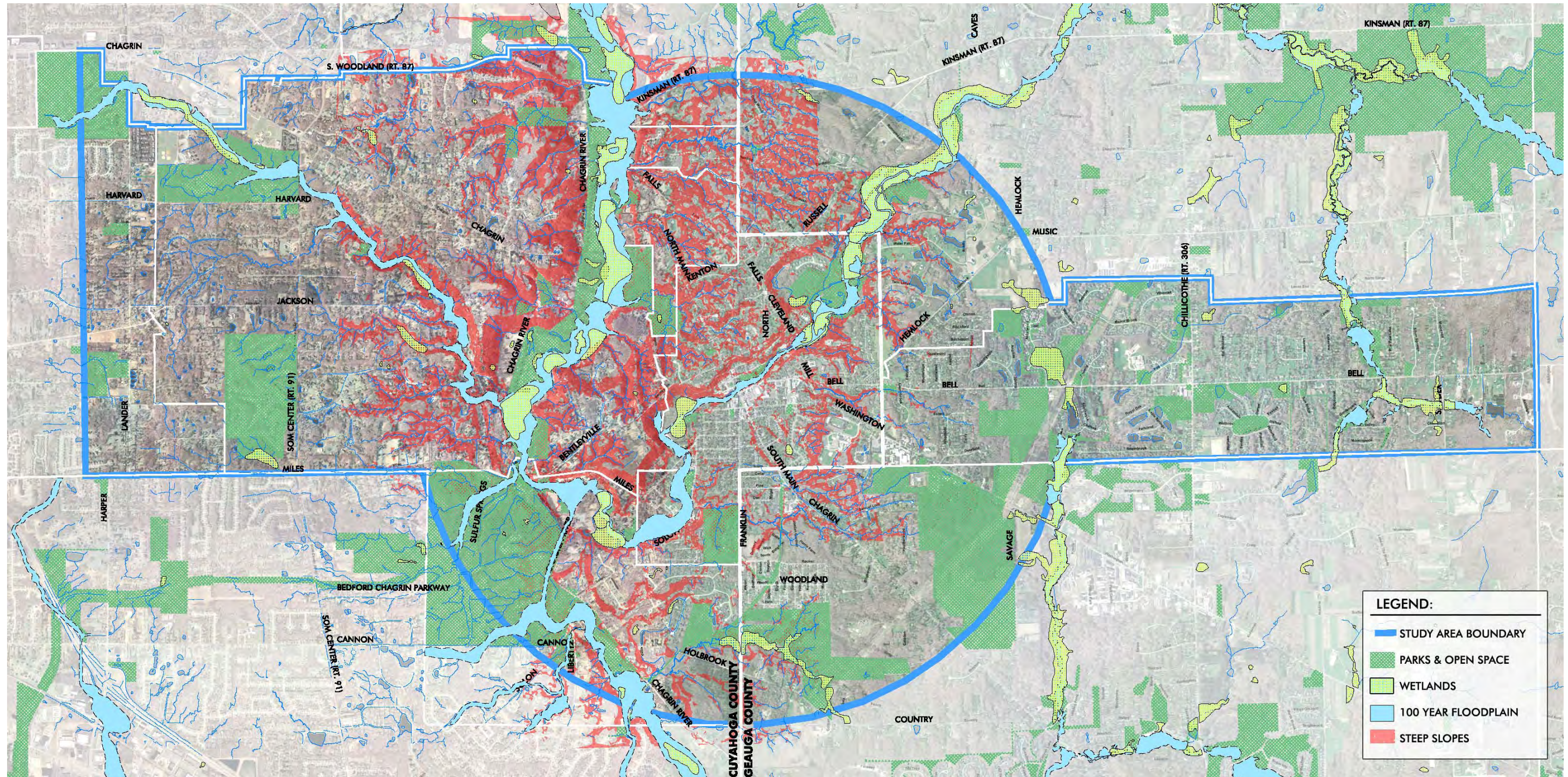


Figure 31: Natural Features

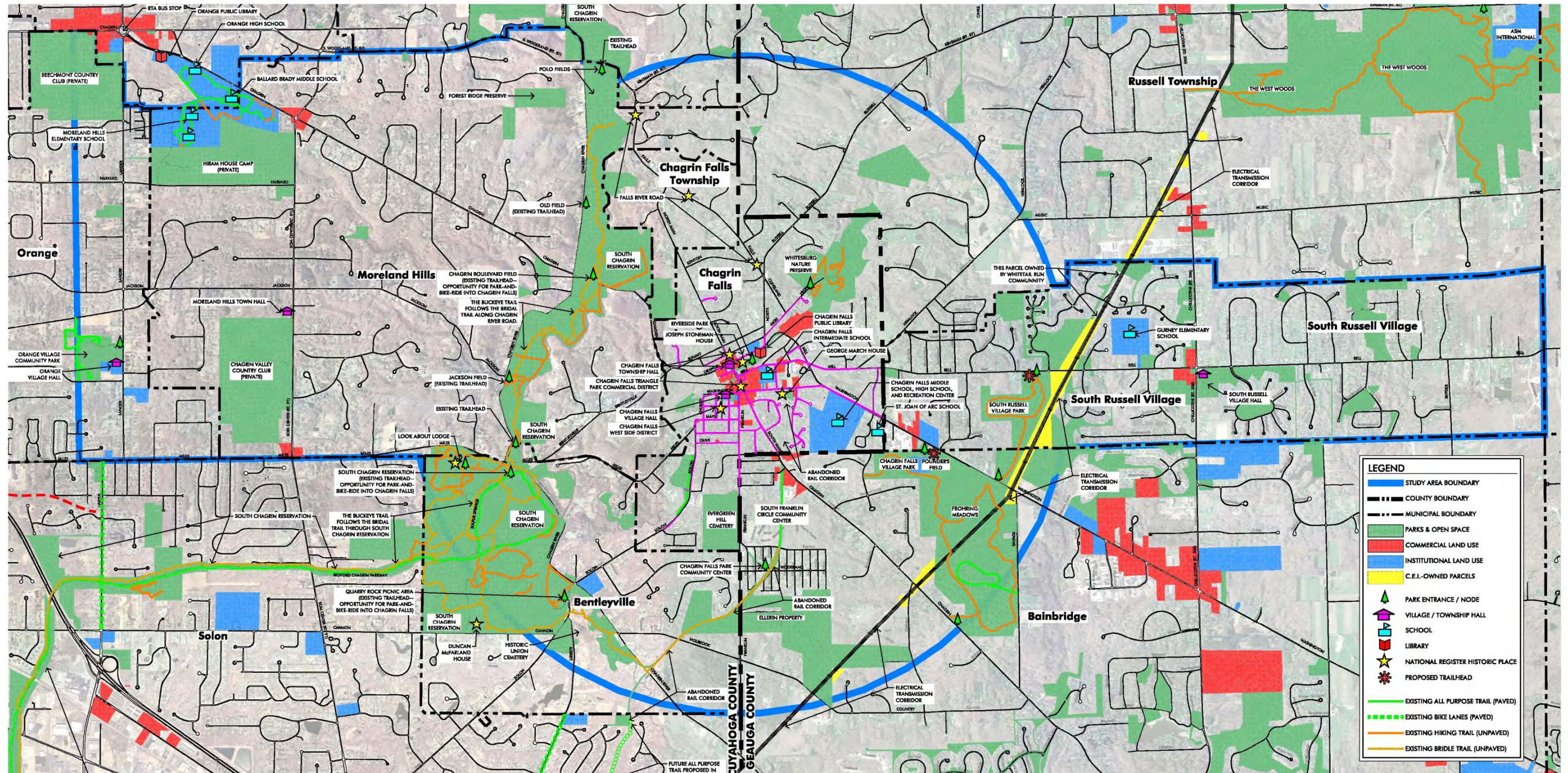


Figure 32: Existing AT Routes and Destinations

Appendix C: Existing Conditions



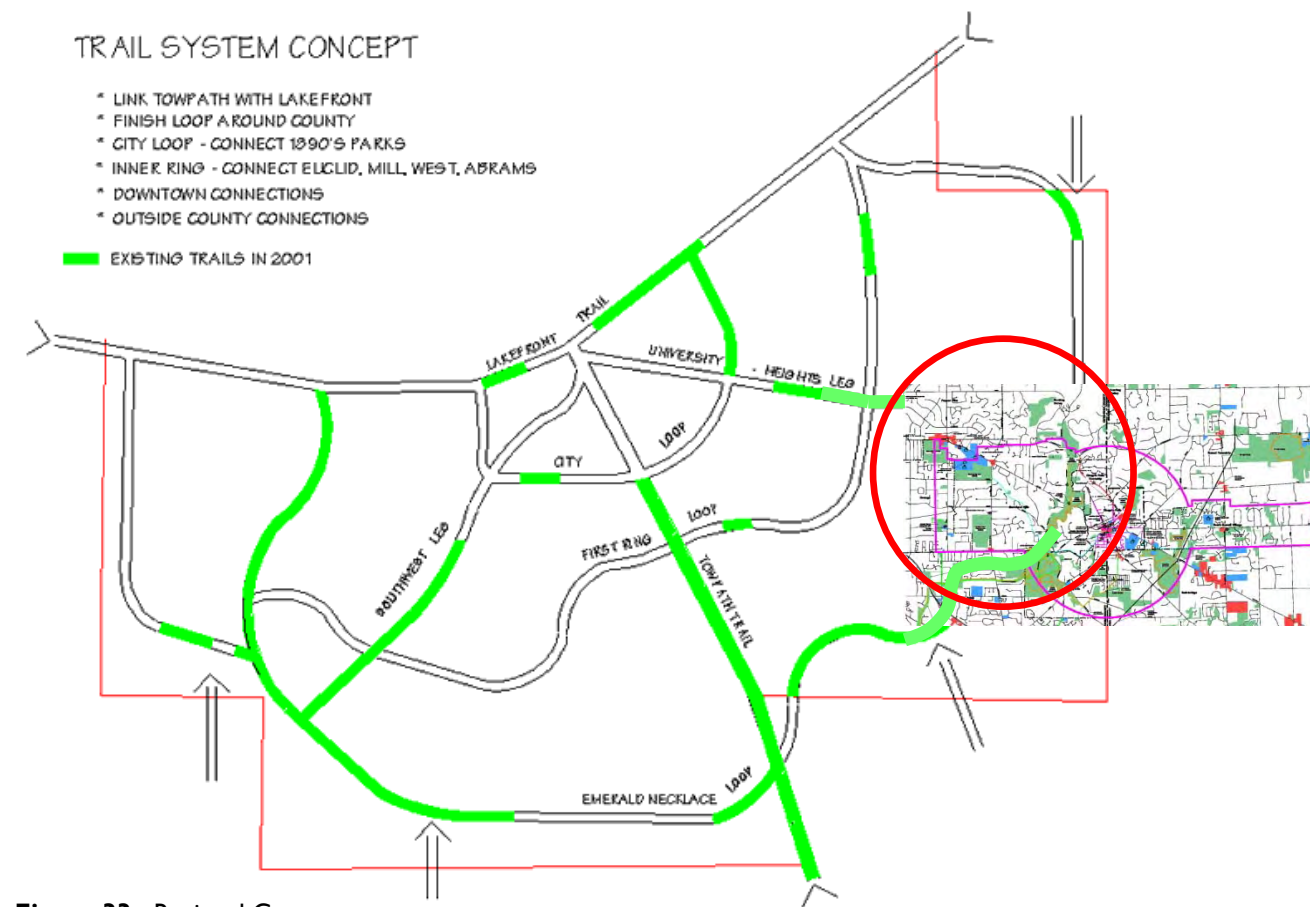


Figure 33: Regional Context

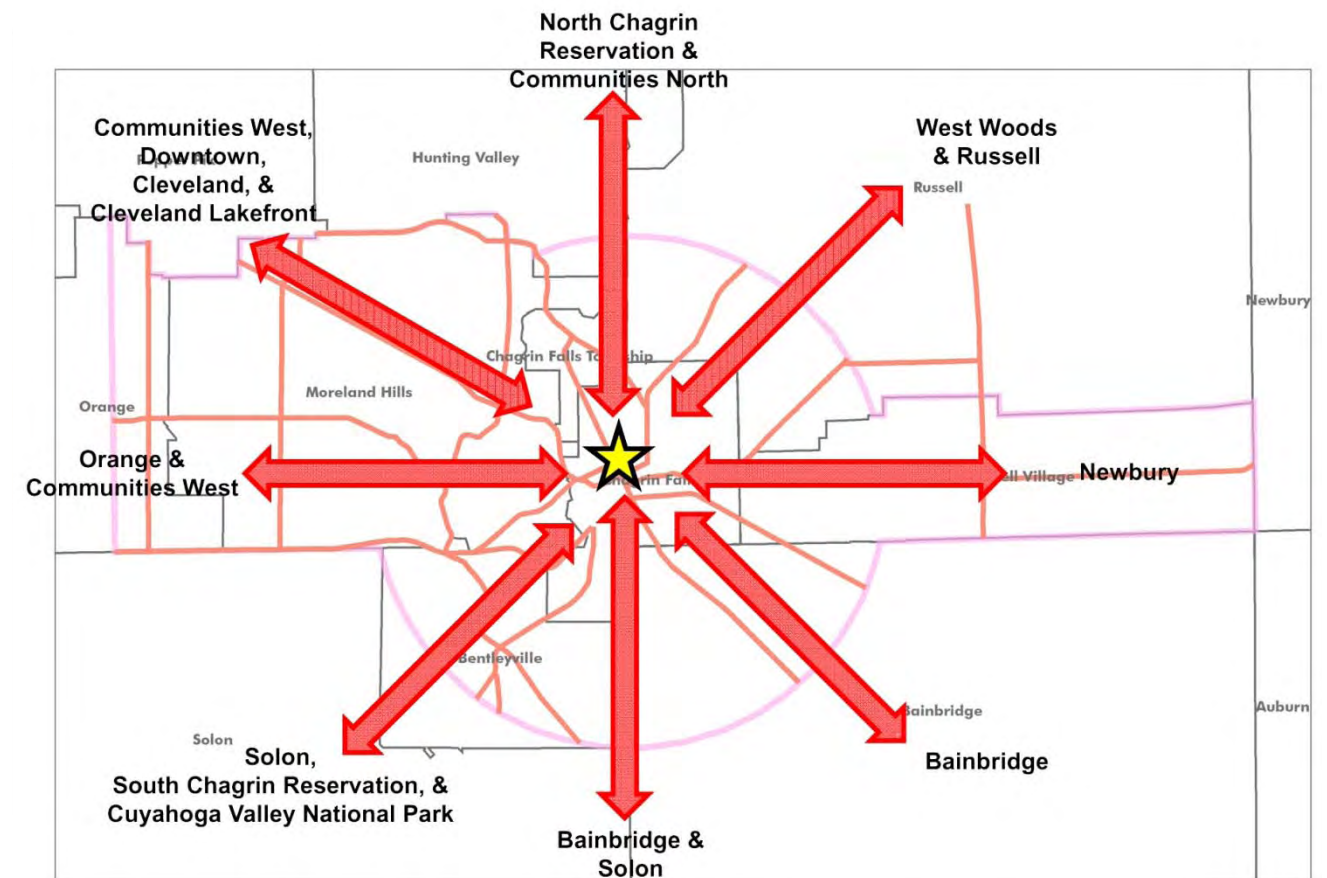


Figure 34: Regional Connections

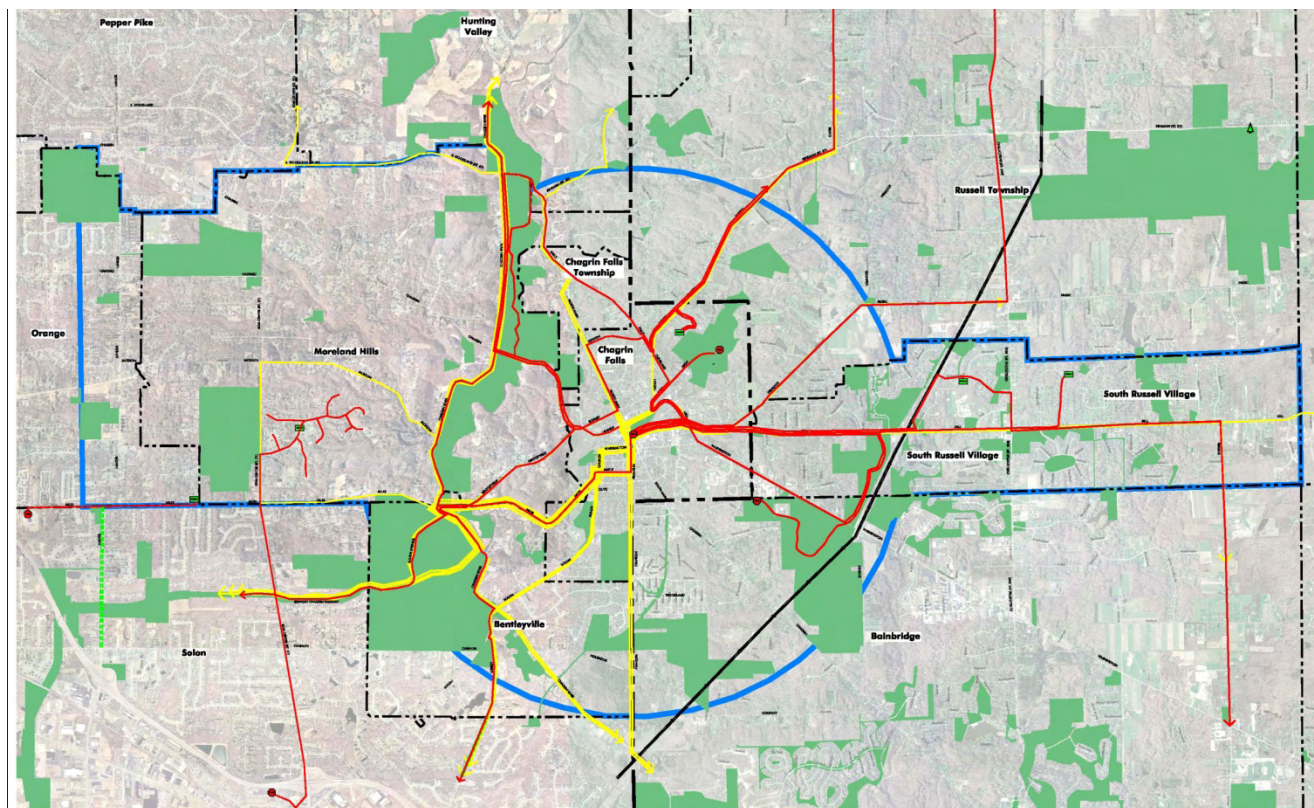


Figure 35: Current Citizen & Cycling Club Routes
(Red = Citizens' typical circuits, Yellow = Cycling Clubs' circuits)

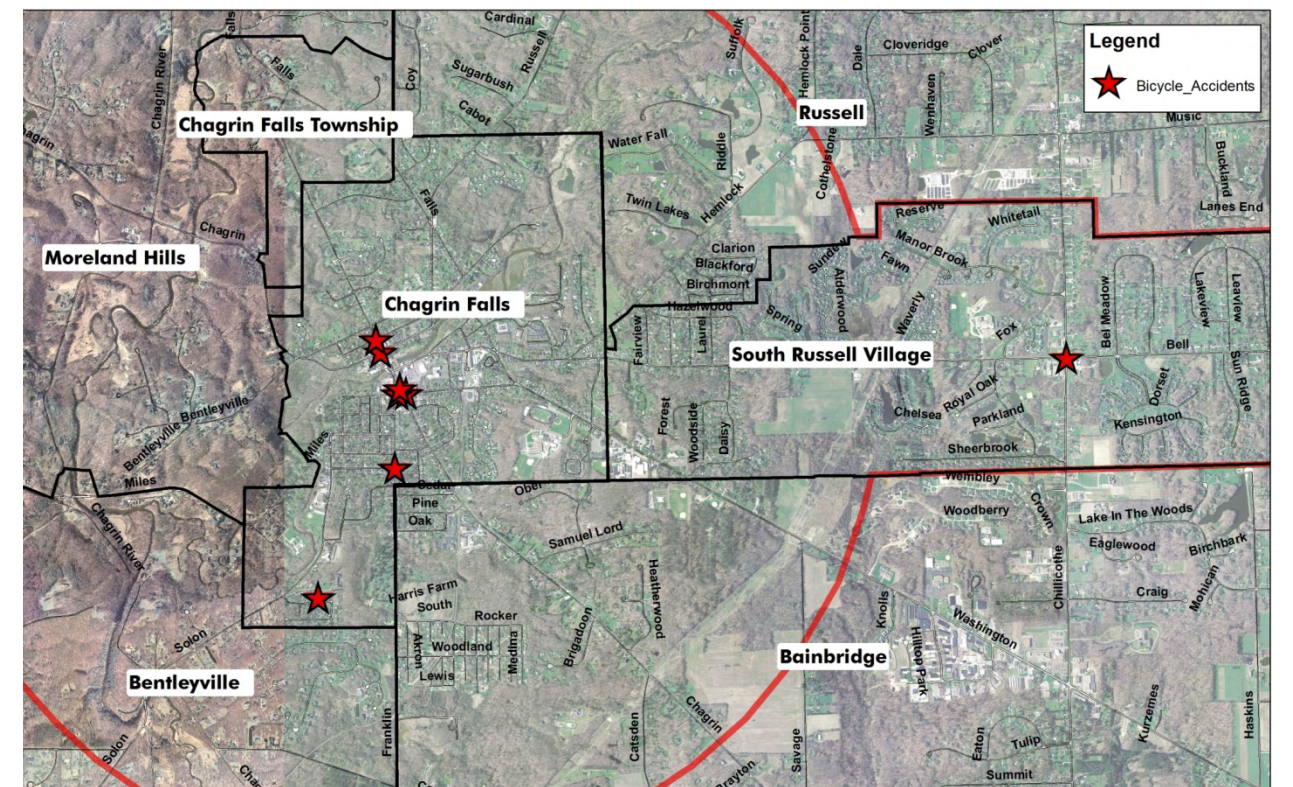


Figure 36: Study Area Bicycle Accidents Reported in the Last 10 Years

Appendix C: Existing Conditions



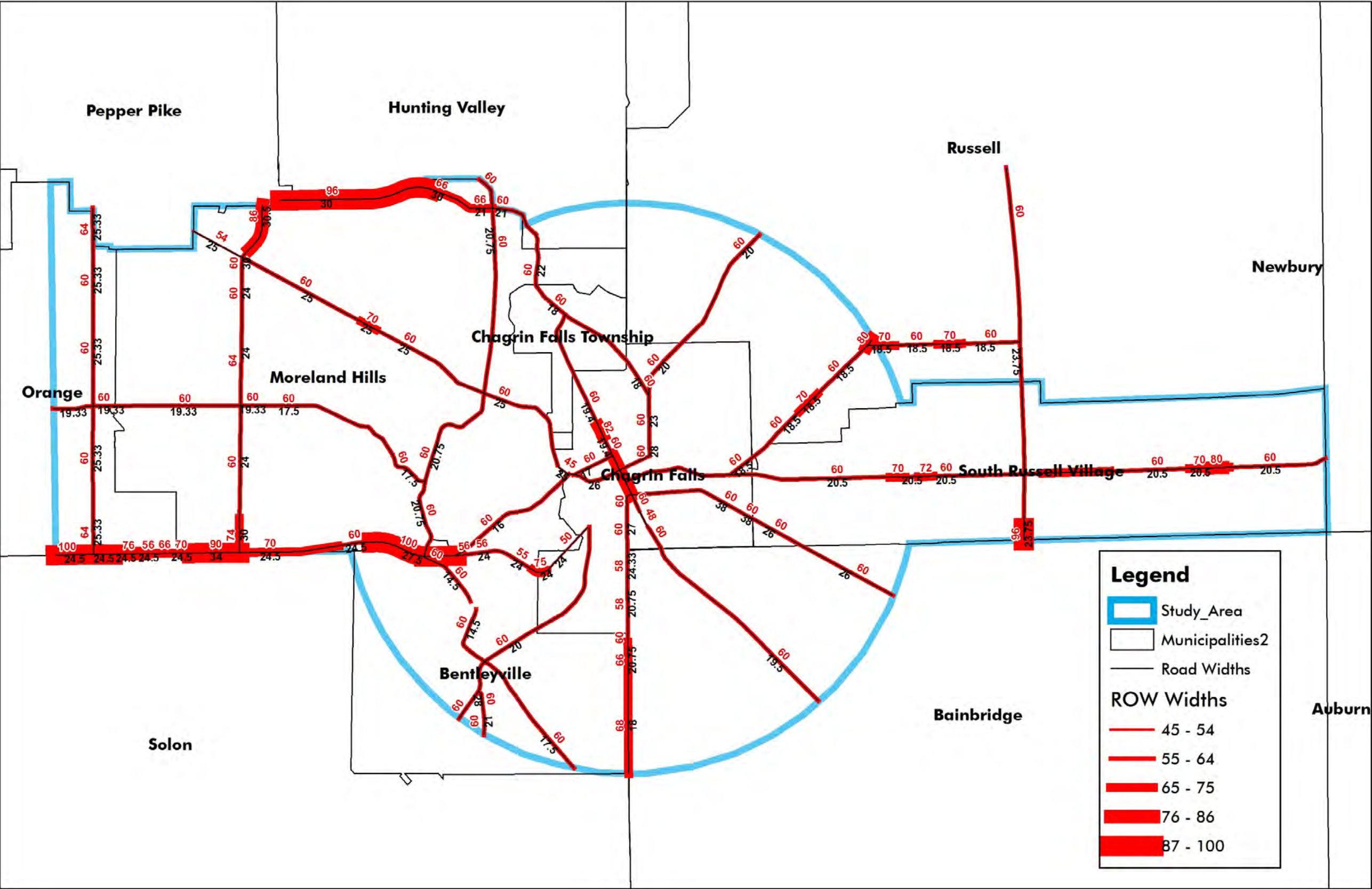


Figure 37: Right of Way / Road Width Comparison



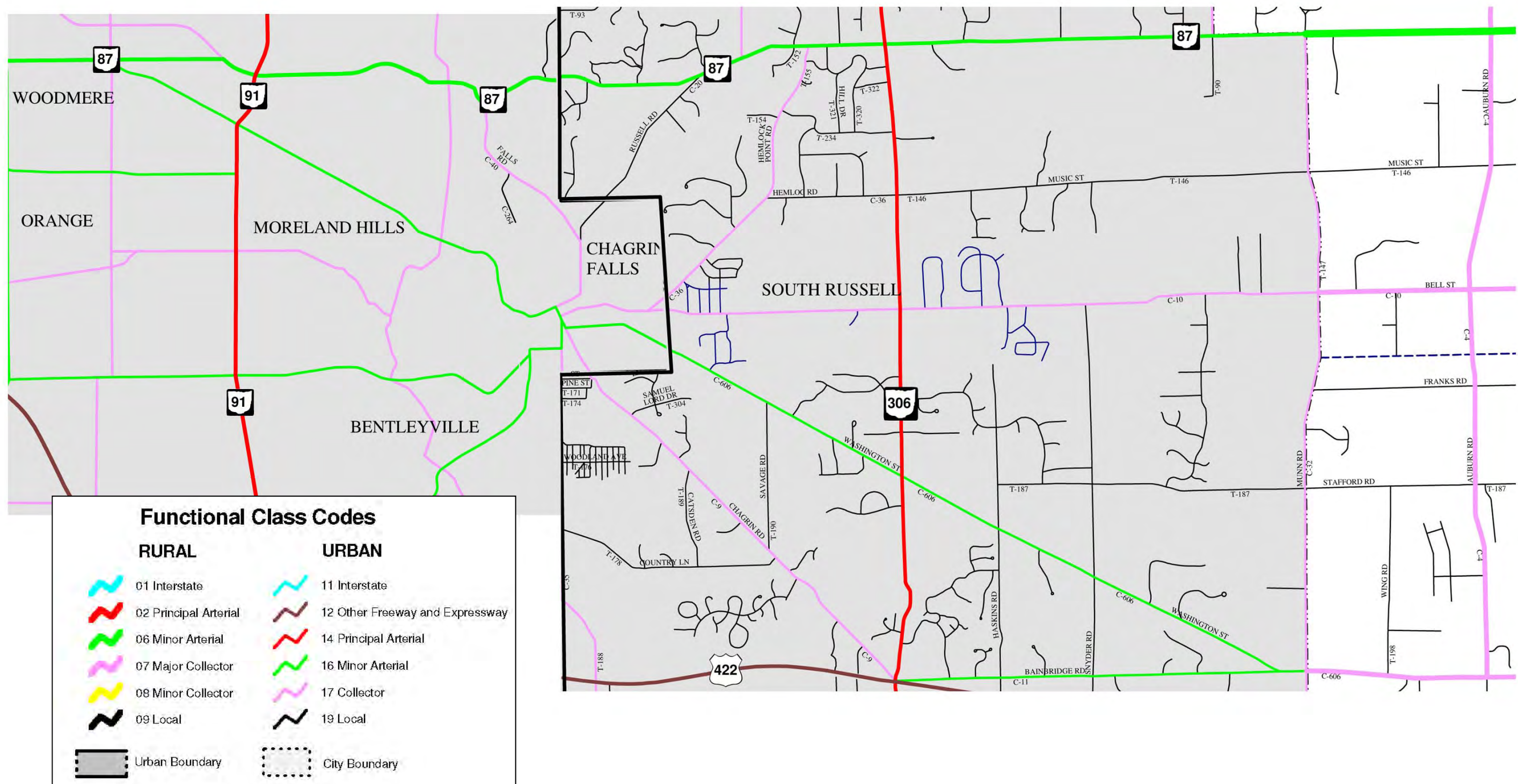


Figure 38: Road Classifications



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Appendix D: User Surveys

The information shown on this page summarizes the responses from 62 responses to the user survey.

The planning team received two responses to the second survey, regarding the installation of a pedestrian bridge over Chagrin River. One was in favor; one was against.

What forms of alternative transportation do you use, and how often?

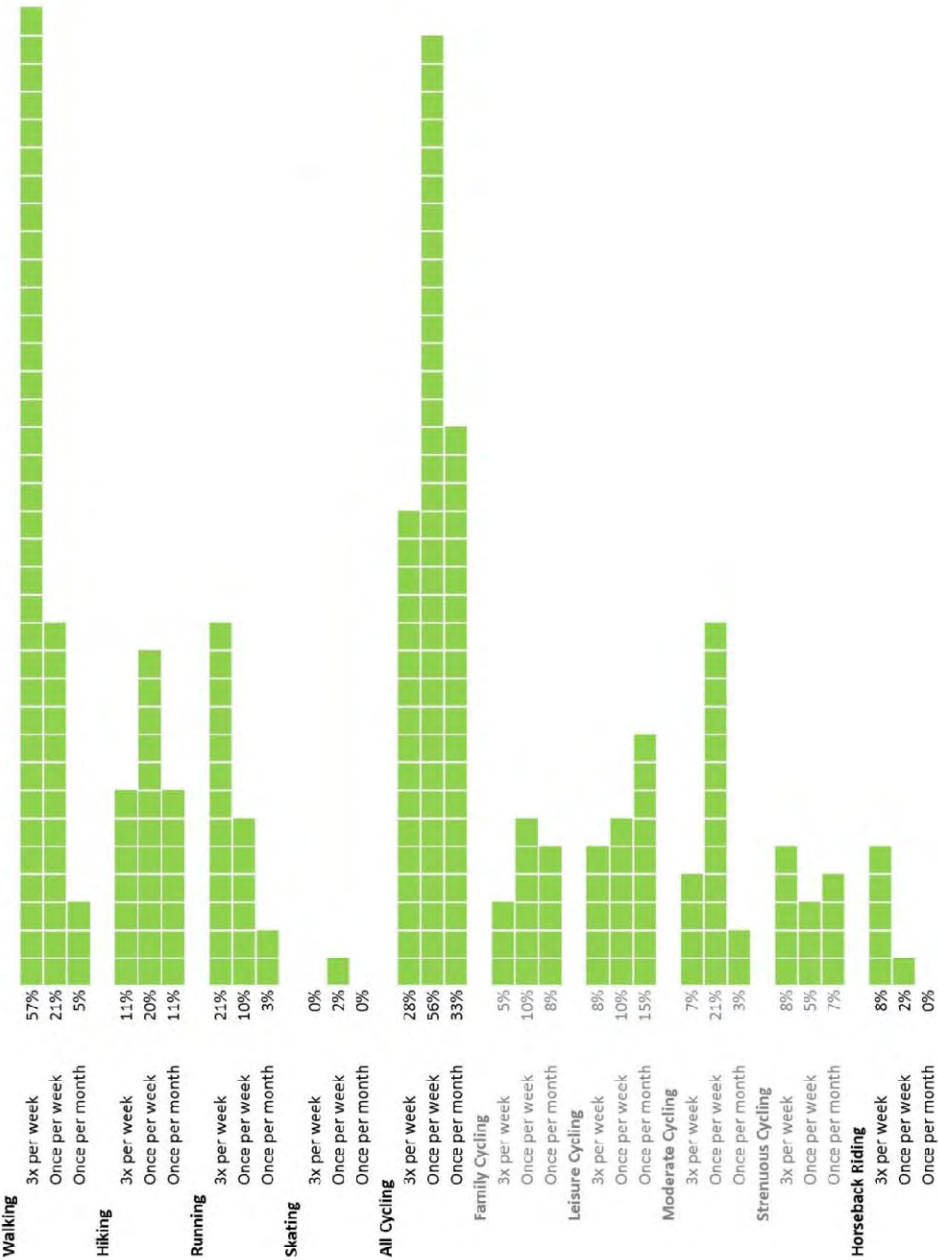


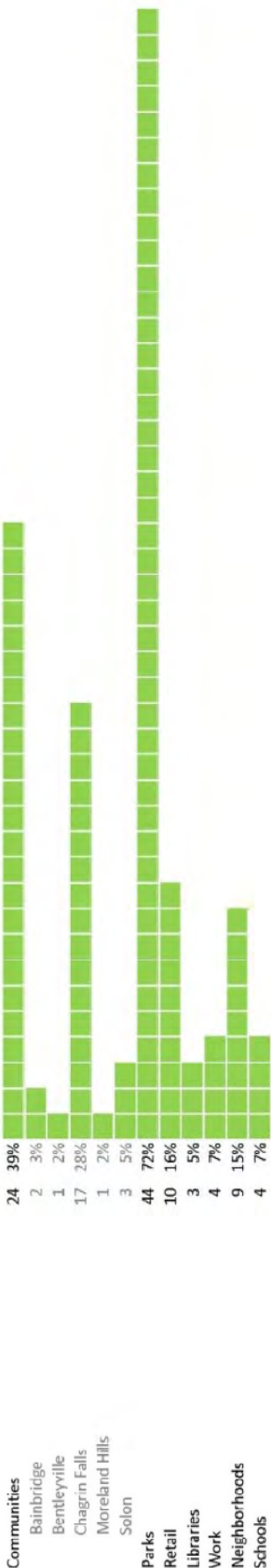
Figure 40: User Survey Results

Appendix D: User Surveys

Why do you currently use alternative transportation?



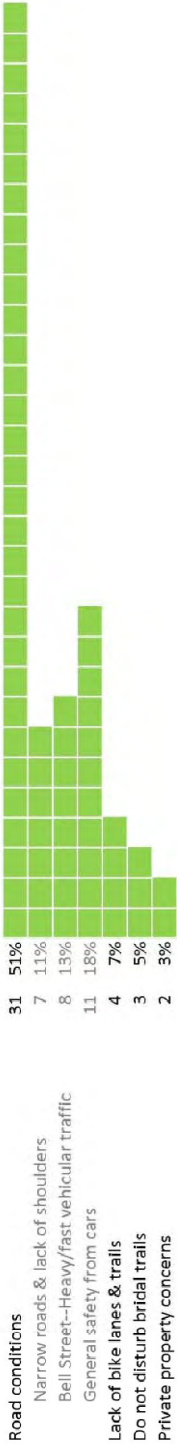
What are your alternative transportation destinations?



What would you like to see happen as a result of this study?



What problems do you currently see, and what concerns do you have?



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Appendix E: BCI Level of Service

CFRATS Bicycle Compatibility Index (BCI): Existing Conditions

$$BCI = 3.67 - 0.966BL - 0.125BLW - 0.152CLW + 0.002CLV + 0.0004OLV + 0.035SPD + 0.506PKG - 0.264AREA + AF$$

where:

- BL = Presence of bicycle lane or shoulder greater than or equal to 3.0 feet (no=0, yes=1)
- BLW = Bicycle lane (or paved shoulder) width, in feet
- CLW = Curb lane width, in feet
- CLV = Curb lane volume, in vehicles per hour
- OLV = Other lane(s) volume (same direction)
- SPD = 85th percentile speed of traffic (9 MPH above posted speed limit)
- PKG = Presence of parking lane with more than 30% occupancy (yes=1, no=0)
- AREA = Type of roadside development (residential=1, other type=0)
- AF = Adjustment factors (truck volumes, parking turnover, and right-turn volumes)

Level of Service	
0 to 1.5	A
1.51 to 2.3	B
2.31 to 3.4	C
3.41 to 4.4	D
4.41 to 5.3	E
5.31 to 100	F

Road segment name	>/= 3'			Average			Other	Posted speed limit	Parking lane?	Residential?	BCI	LOS	
	Shoulder?	Half of		Volume count 1	Volume Count 2	daily traffic volume	Curb lane volume (vph)		lane volume (vph)	No=0 Yes=1			Other=0 Yes=1
	No=0 Yes=1	Shoulder width (ft.)	roadway width (ft.)										
Bell--306 to CF boundary	0	1	10.25			6092	127		35	0	1	3.67	D
Bell--CF boundary to Hemlock	0	0	10.25			7250	151		25	0	1	3.34	C
Bell--Hemlock to Main	0	0	9			9150	191		25	0	1	3.61	D
Bell--limit to 306	0	1.5	10.25			6555	137		35	0	1	3.70	D
Bentleyville	0	0	8			544	11		25	0	1	3.40	C
Chagrin Blvd--CRR to Bentleyville	0	0	12.5	6750	8700	7725	161		35	0	1	3.37	C
Chagrin Blvd--Giles to CRR	0	1	12.5	9700	6250	7975	166		35	0	1	3.41	C
Chagrin Blvd--limit to CF boundary	0	1	9.75		4986	4200	88		35	0	1	3.67	D
Chagrin Blvd--limit to SOM	0	1	12.5			9150	191		20	0	0	3.19	C
Chagrin Blvd--SOM to Giles	0	1	12.5	9700	6250	7975	166		40	0	1	3.58	D
CRR--Chagrin to Jackson	0	0.5	10.375	550	1550	1050	22		30	0	1	3.25	C
CRR--Jackson to Miles	0	1	10.375			876	18		35	0	1	3.43	D
CRR--limit to Woodland	0	0	10.375			3350	70		35	0	1	3.51	D
CRR--Miles to out bridge	0	0	7.25			647	13		25	0	1	3.52	D
CRR--out bridge to Solon	0	0	7.25			264	6		25	0	1	3.51	D
CRR--Solon to limit	0	0	8.75			1130	24		35	0	1	3.66	D
CRR--Woodland to Chagrin Blvd.	0	0.5	10.375	2050	1100	1575	33		35	0	1	3.45	D
East Washington--Cleveland to Chagrin	0	0	19			11000	229		35	0	0	2.78	C
East Washington--Daisy to Cleveland	0	0	19			8393	175		35	0	0	2.67	C
East Washington--limit to Daisy	0	2	13			8393	175		45	0	1	3.72	D
Falls--Main to North	0	2	9	700	1050	875	18		35	0	1	3.67	D
Falls--Woodland to Main	0	2	11			2100	44		30	0	1	3.24	C
Franklin--CF boundary to South	0	2	10.375			3040	63		25	0	1	3.20	C
Franklin--limit to CF boundary	0	2	9			3040	63		35	0	1	3.76	D
Franklin--South to Washington	0	0	10.375			9500	198		25	0	1	3.41	D
Hemlock--CF boundary to Bell	0	0	9.25			2147	45		25	0	1	3.28	C
Hemlock--Music to CF boundary	0	1	9.25			2147	45		40	0	1	3.83	D
Jackson--Giles to CRR	0	0	8.75	1100	800	950	20		25	0	1	3.31	C
Jackson--limit to SOM	0	0	9.665			2300	48		35	0	1	3.57	D
Jackson--SOM to Giles	0	1	8.75	1100	800	950	20		35	0	1	3.68	D
Lander--Harvard to Chagrin	0	0	12.66	5450	8000	6725	140		35	0	1	3.30	C
Lander--Jackson to Harvard	0	0	12.66			5450	114		35	0	1	3.25	C
Lander--Miles to Jackson	0	0	12.66	4500	5750	5125	107		35	0	1	3.24	C
Liberty Road--bridge to Solon	0	0	14			5085	106		35	0	1	3.03	C
Liberty Road--limit to bridge	0	0	10.5			5085	106		35	0	1	3.56	D
Main--Cottage to Orange	0	0	9.7			2200	46		25	1	0	3.98	D
Main--Falls to Summit	0	1	9.7	1300	2200	1750	36		35	0	1	3.57	D
Main--Orange to Franklin	0	0	14.25			2200	23	23	25	1	0	3.25	C
Main--Summit to Cottage	0	0	9.7	1300	2200	1750	36		25	0	1	3.19	C
Miles--Bentleyville to Solon	0	1	12	4350	4450	4400	92		35	0	1	3.33	C
Miles--CRR to Bentleyville	0	0	13.75			3675	77		35	0	1	3.01	C
Miles--Lander to SOM	0	1.5	12.25	8300	6450	7375	154		35	0	1	3.43	D
Miles--limit to Lander	0	1.5	12.25			9250	193		35	0	1	3.51	D
Miles--SOM to Chagrin River Road	0	0	12.25			3416	71		35	0	1	3.23	C
North--Falls to Orange	0	0	9.7			2500	52		25	0	1	3.23	C
Orange--North to Main	0	0	14			2500	52		25	1	0	3.34	C
Russell--CF boundary to Falls Road	0	0	10			1900	40		35	0	1	3.51	D
Russell--limit to CF boundary	0	0	10			1900	40		45	0	1	3.86	D
Solon--Canon to Liberty	0	0	14	4704	4158	4431	92		35	0	1	3.00	C
Solon--CRR to Miles	0	0	10	5386	8328	6857	143		35	0	1	3.71	D
Solon--Liberty to CRR	0	0	14	4509	5189	4849	101		35	0	1	3.02	C
Solon--limit to Canon	0	0	9.875			4204	88		35	0	1	3.62	D
SOM--Chagrin to Harvard	0	1	12			9850	205		40	0	1	3.73	D
SOM--Harvard to Jackson	0	1	12			10050	209		40	0	1	3.74	D
SOM--Jackson to Miles	0	1.5	12	9900	9750	9825	205		40	0	1	3.75	D
SOM--Woodland to Chagrin	0	0	15.25			10750	224		35	0	1	3.08	C
South Main--CF boundary to Washington	0	1	9.75		4986	4200	88		25	0	1	3.32	C
West Orange Street	0	0	13			7600	158		25	0	0	3.20	C
Woodland--CRR to Falls	0	2	10.5			8250	172		40	0	1	3.92	D
Woodland--SOM to CRR	0	0	15	8750	7850	8300	173		45	0	1	3.36	C

Figure 41: Existing BCI Level of Service Data

Existing Level of Service

The plan below depicts the level of service for the majority of main roads within the study area, based on the data shown on the left. The road segments here differ from the proposed segments in the master plan, since the planning team performed this analysis early in the project, before the team established the proposed route segments.

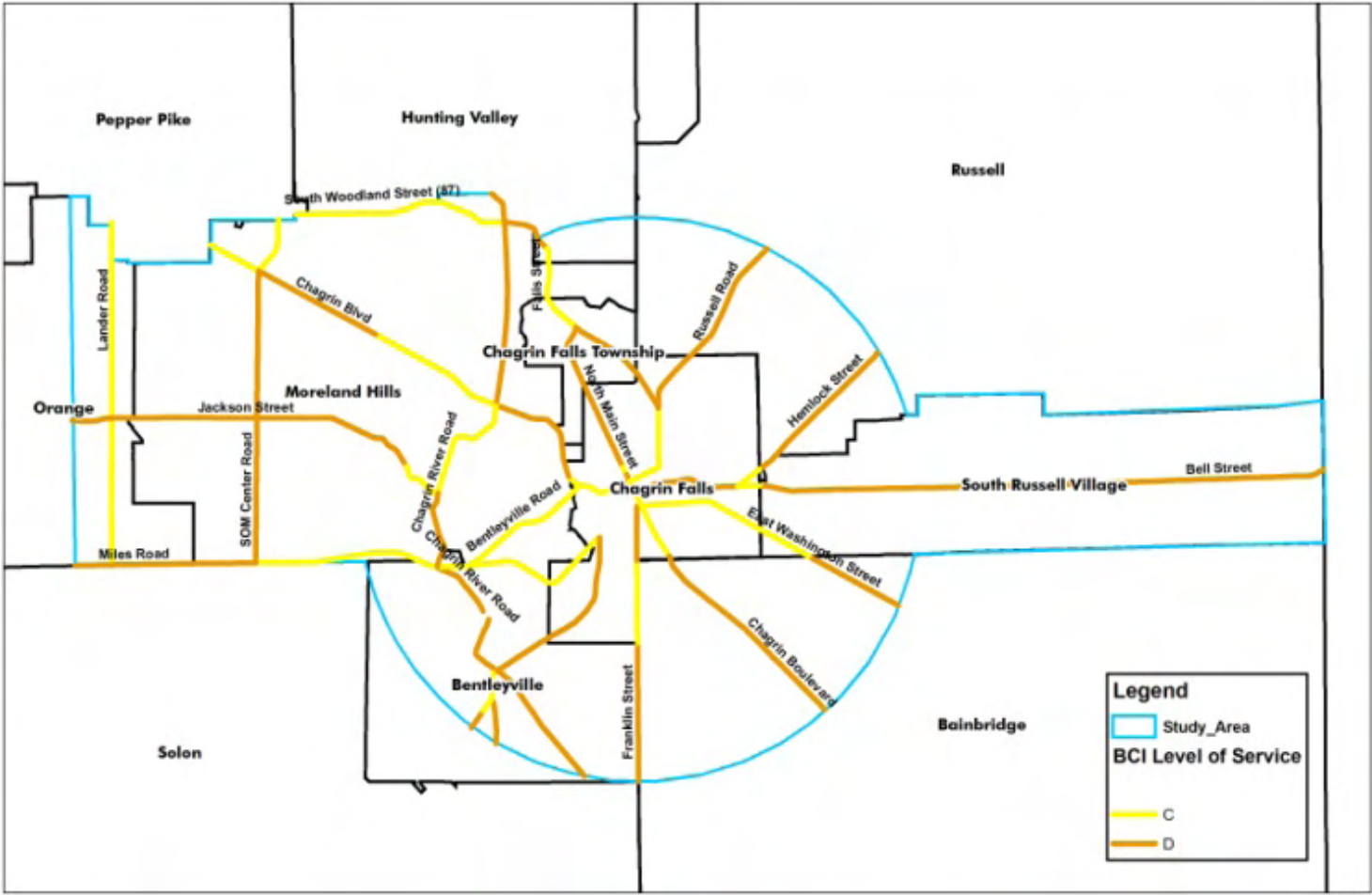


Figure 42: Existing BCI Level of Service Plan



CFRATS Bicycle Compatibility Index (BCI): Proposed Conditions

BCI = 3.67 - 0.966BL - 0.125BLW - 0.152CLW + 0.002CLV + 0.0004OLV + 0.035SPD + 0.506PKG - 0.264AREA + AF
where:

- BL = Presence of bicycle lane or shoulder greater than or equal to 3.0 feet (no=0, yes=1)
- BLW = Bicycle lane (or paved shoulder) width , in feet
- CLW = Curb lane width, in feet
- CLV = Curb lane volume, in vehicles per hour
- OLV = Other lane(s) volume (same direction)
- SPD = 85th percentile speed of traffic (9 MPH above posted speed limit)
- PKG = Presence of parking lane with more than 30% occupancy (yes=1, no=0)
- AREA = Type of roadside development (residential=1, other type=0)
- AF = Adjustment factors (truck volumes, parking turnover, and right-turn volumes)

Level of Service	
0 to 1.5	A
1.51 to 2.3	B
2.31 to 3.4	C
3.41 to 4.4	D
4.41 to 5.3	F
5.31 to 100	F

Road segment name	>= 3'			Volume count 1	Volume Count 2	Average		Curb lane volume (vph)	Other lane volume (vph)	Posted speed limit	Parking lane?		Residential?		BCI	LOS
	Shoulder?	Shoulder	Half of			daily	lane				No=0	Other=0				
	No=0 Yes=1	width (ft.)	roadway width (ft.)			traffic volume	volume				Yes=1	Yes=1				
Bell--306 to CF boundary	0	1	10.25			6092	127			35		0		1	3.67	D
Bell--CF boundary to Hemlock	0	0	10.25			7250	151			25		0		1	3.34	C
Bell--Hemlock to Main	0	0	9			9150	191			25		0		1	3.61	D
Bell--limit to 306	1	4	16			6555	137			35		0		1	1.93	B
Bentleyville	0	0	8			544	11			25		0		1	3.40	C
Chagrin Blvd--CRR to Bentleyville	1	5	16	6750	8700	7725	161			35		0		1	2.00	B
Chagrin Blvd--Giles to CRR	1	5	16	9700	6250	7975	166			35		0		1	2.02	B
Chagrin Blvd--limit to CF boundary	0	1	9.75			4986	88			35		0		1	3.67	D
Chagrin Blvd--limit to SOM	1	5	16			9150	191			20		0		0	1.80	B
Chagrin Blvd--SOM to Giles	1	4	16	9700	6250	7975	166			40		0		1	2.16	B
CRR--Chagrin to Jackson	0	0.5	10.375	550	1550	1050	22			30		0		1	3.25	C
CRR--Jackson to Miles	0	1	10.375			876	18			35		0		1	3.43	D
CRR--limit to Woodland	0	0	10.375			3350	70			35		0		1	3.51	D
CRR--Miles to out bridge	0	0	7.25			647	13			25		0		1	3.52	D
CRR--out bridge to Solon	0	0	7.25			264	6			25		0		1	3.51	D
CRR--Solon to limit	0	0	8.75			1130	24			35		0		1	3.66	D
CRR--Woodland to Chagrin Blvd.	0	0.5	10.375	2050	1100	1575	33			35		0		1	3.45	D
East Washington--Cleveland to Chagrin	0	0	19			11000	229			35		0		0	2.78	C
East Washington--Daisy to Cleveland	0	0	19			8393	175			35		0		0	2.67	C
East Washington--limit to Daisy	0	2	13			8393	175			45		0		1	3.72	D
Falls--Main to North	0	2	9	700	1050	875	18			35		0		1	3.67	D
Falls--Woodland to Main	0	2	11			2100	44			30		0		1	3.24	C
Franklin--CF boundary to South	1	5	16			3040	63			25		0		1	1.46	A
Franklin--limit to CF boundary	1	4	16			3040	63			35		0		1	1.78	B
Franklin--South to Washington	0	0	10.375			9500	198			25		0		1	3.41	D
Hemlock--CF boundary to Bell	0	0	9.25			2147	45			25		0		1	3.28	C
Hemlock--Music to CF boundary	0	1	9.25			2147	45			40		0		1	3.83	D
Jackson--Giles to CRR	1	4	15	1100	800	950	20			25		0		1	1.50	A
Jackson--limit to SOM	1	4	15			2300	48			35		0		1	1.90	B
Jackson--SOM to Giles	1	4	15	1100	800	950	20			35		0		1	1.85	B
Lander--Harvard to Chagrin	0	0	12.66	5450	8000	6725	140			35		0		1	3.30	C
Lander--Jackson to Harvard	0	0	12.66			5450	114			35		0		1	3.25	C
Lander--Miles to Jackson	0	0	12.66	4500	5750	5125	107			35		0		1	3.24	C
Liberty Road--bridge to Solon	1	4	16			5085	106			35		0		1	1.87	B
Liberty Road--limit to bridge	1	4	16			5085	106			35		0		1	1.87	B
Main--Cottage to Orange	0	0	9.7			2200	46			25		1		0	3.98	D
Main--Falls to Summit	0	1	9.7	1300	2200	1750	36			35		0		1	3.57	D
Main--Orange to Franklin	0	0	14.25			2200	23		23	25		1		0	3.25	C
Main--Summit to Cottage	0	0	9.7	1300	2200	1750	36			25		0		1	3.19	C
Miles--Bentleyville to Solon	1	5	16	4350	4450	4400	92			35		0		1	1.87	B
Miles--CRR to Bentleyville	1	5	16			3675	77			35		0		1	1.84	B
Miles--Lander to SOM	0	1.5	12.25	8300	6450	7375	154			35		0		1	3.43	D
Miles--limit to Lander	0	1.5	12.25			9250	193			35		0		1	3.51	D
Miles--SOM to Chagrin River Road	0	0	12.25			3416	71			35		0		1	3.23	C
North--Falls to Orange	0	0	9.7			2500	52			25		0		1	3.23	C
Orange--North to Main	0	0	14			2500	52			25		1		0	3.34	C
Russell--CF boundary to Falls Road	0	0	10			1900	40			35		0		1	3.51	D
Russell--limit to CF boundary	0	0	10			1900	40			45		0		1	3.86	D
Solon--Canon to Liberty	1	5	16	4704	4158	4431	92			35		0		1	1.87	B
Solon--CRR to Miles	0	0	10	5386	8328	6857	143			35		0		1	3.71	D
Solon--Liberty to CRR	1	5	16	4509	5189	4849	101			35		0		1	1.89	B
Solon--limit to Canon	1	5	16			4204	88			35		0		1	1.86	B
SOM--Chagrin to Harvard	0	1	12			9850	205			40		0		1	3.73	D
SOM--Harvard to Jackson	0	1	12			10050	209			40		0		1	3.74	D
SOM--Jackson to Miles	0	1.5	12	9900	9750	9825	205			40		0		1	3.75	D
SOM--Woodland to Chagrin	0	0	15.25			10750	224			35		0		1	3.08	C
South Main--CF boundary to Washington	0	1	9.75			4986	88			25		0		1	3.32	C
West Orange Street	0	0	13			7600	158			25		0		0	3.20	C
Woodland--CRR to Falls	0	2	10.5			8250	172			40		0		1	3.92	D
Woodland--SOM to CRR	1	5	17	8750	7850	8300	173			45		0		1	2.23	B

Figure 43: Proposed BCI Level of Service Data

Proposed Level of Service for Bike Lane Segments

The plan below and data to the left show how the level of service improves for the segments where bike lanes are proposed in the master plan. The level of service for all other segments remained the same as the existing conditions, since the Bicycle Compatibility Index does not relate to sidewalk, all-purpose trail, or signed shared roadway improvements.

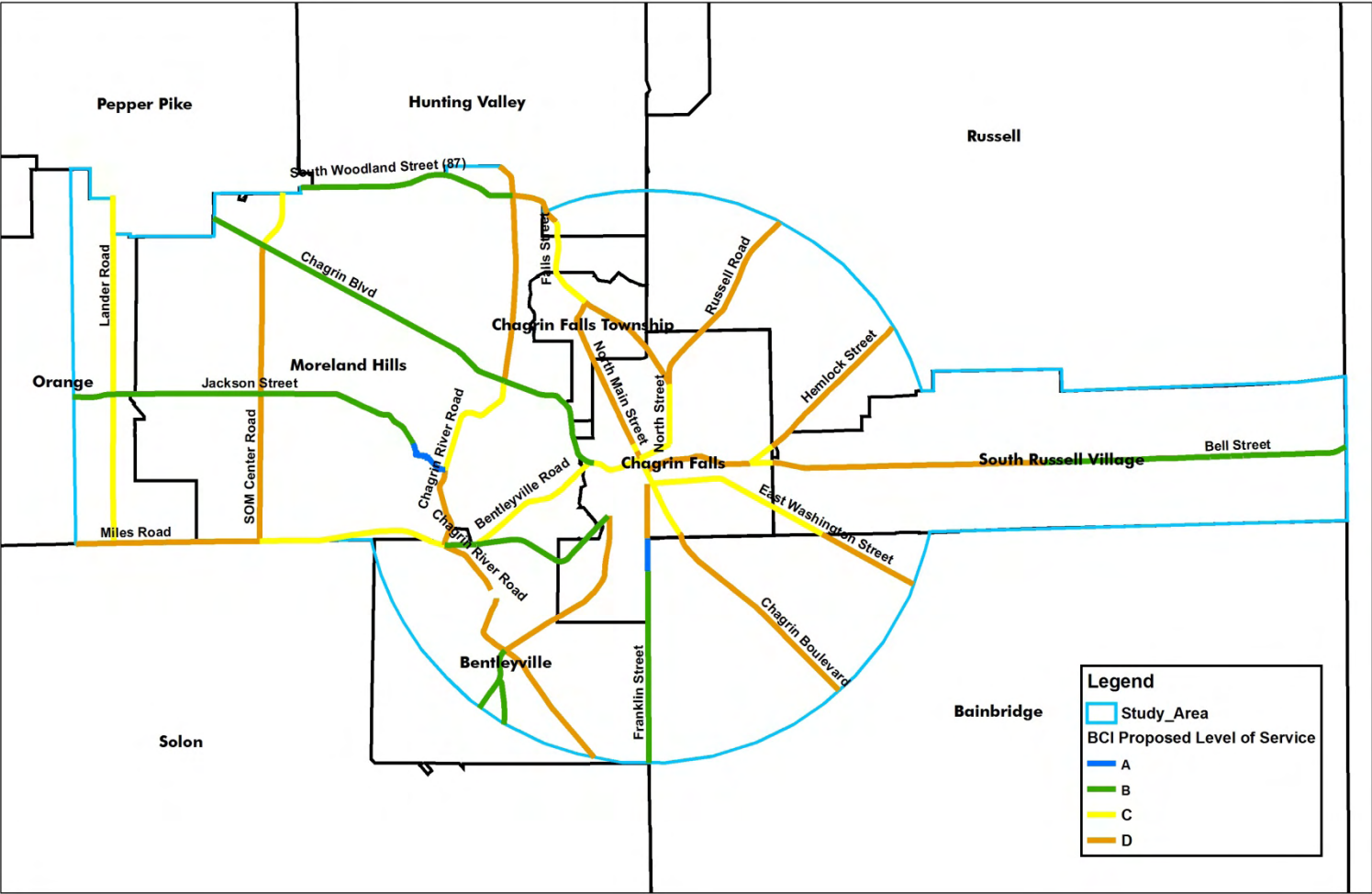


Figure 44: Proposed BCI Level of Service Plan



Appendix F: Bridge Modifications

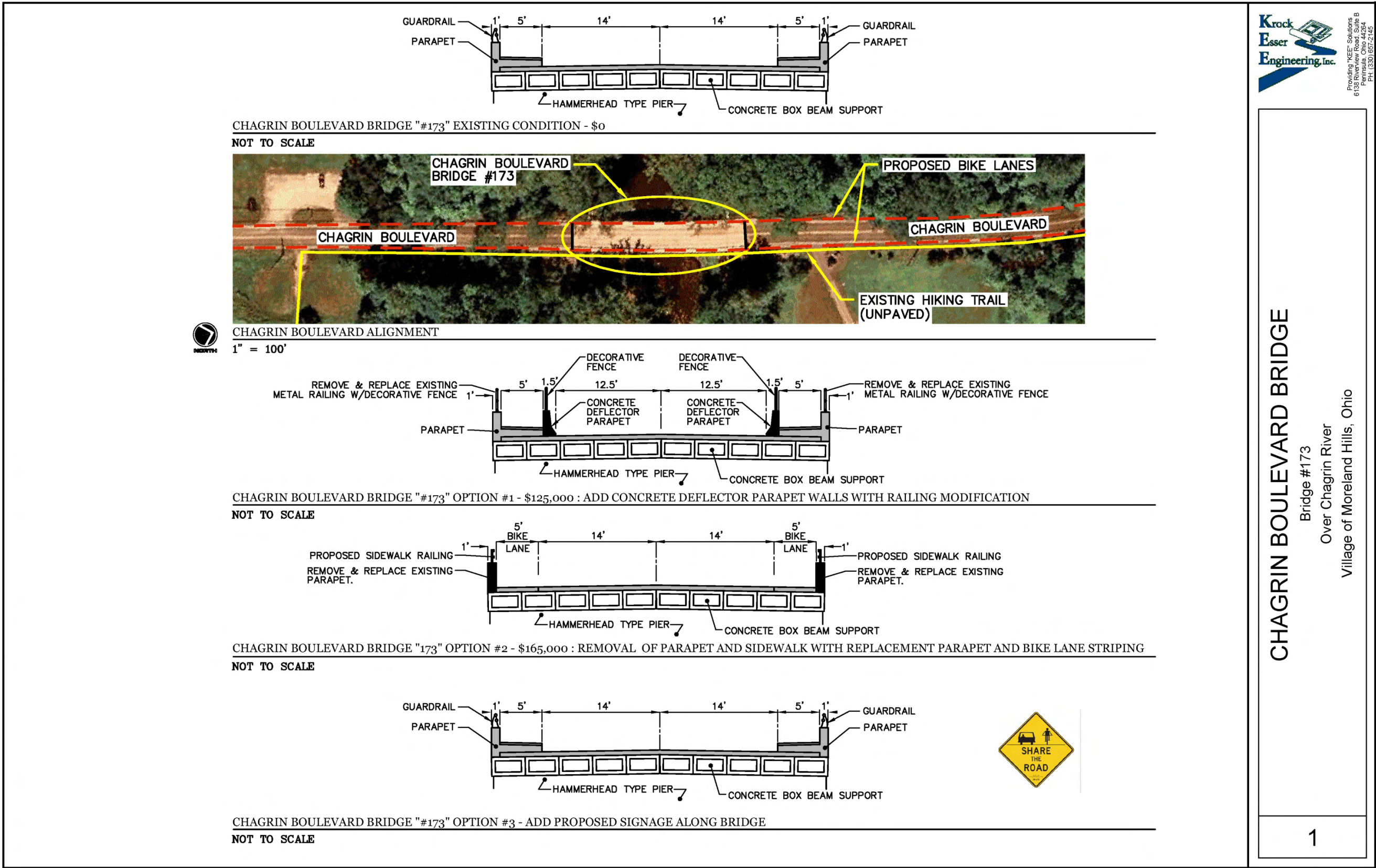


Figure 45: Chagrin Boulevard Bridge Modifications



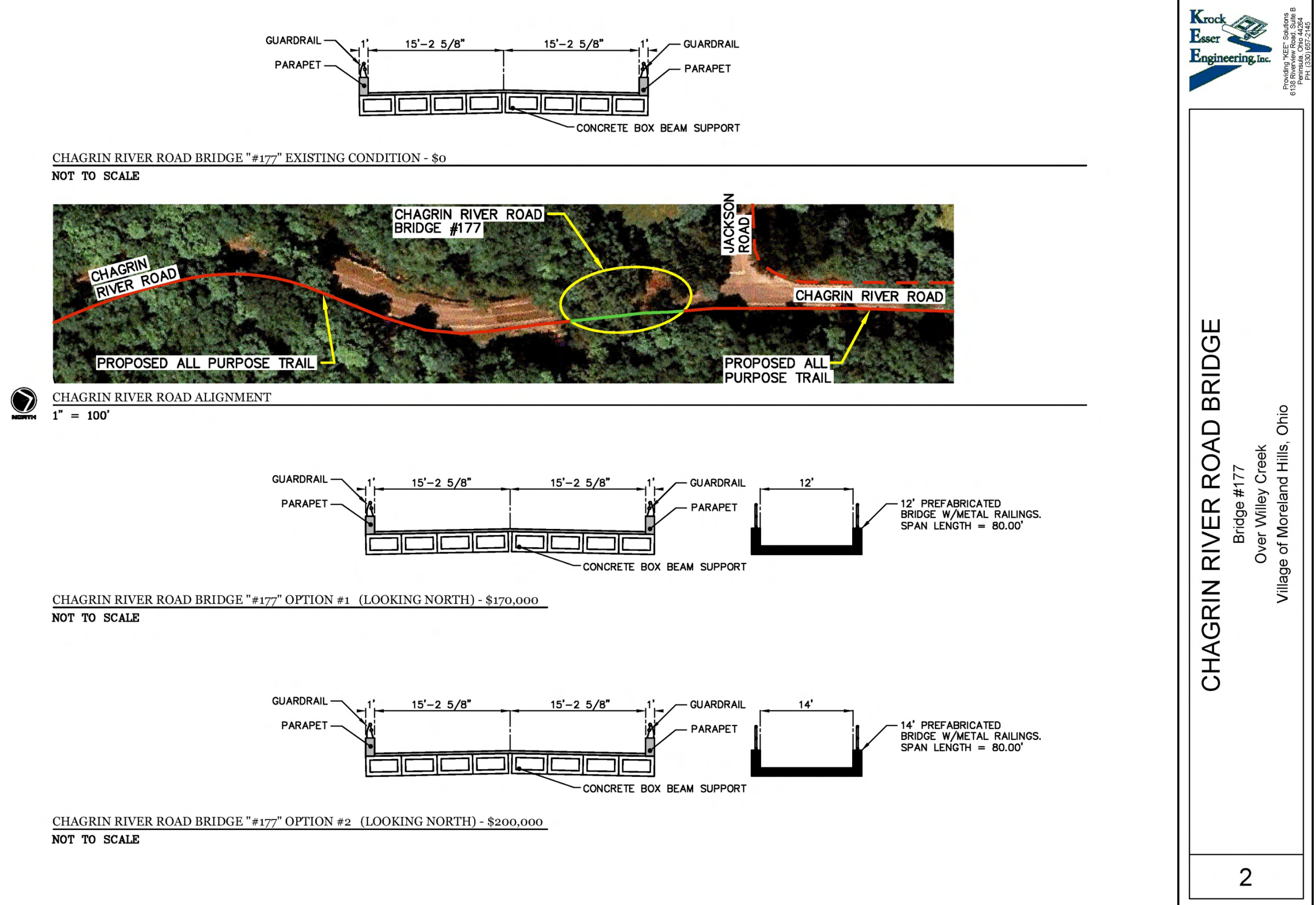
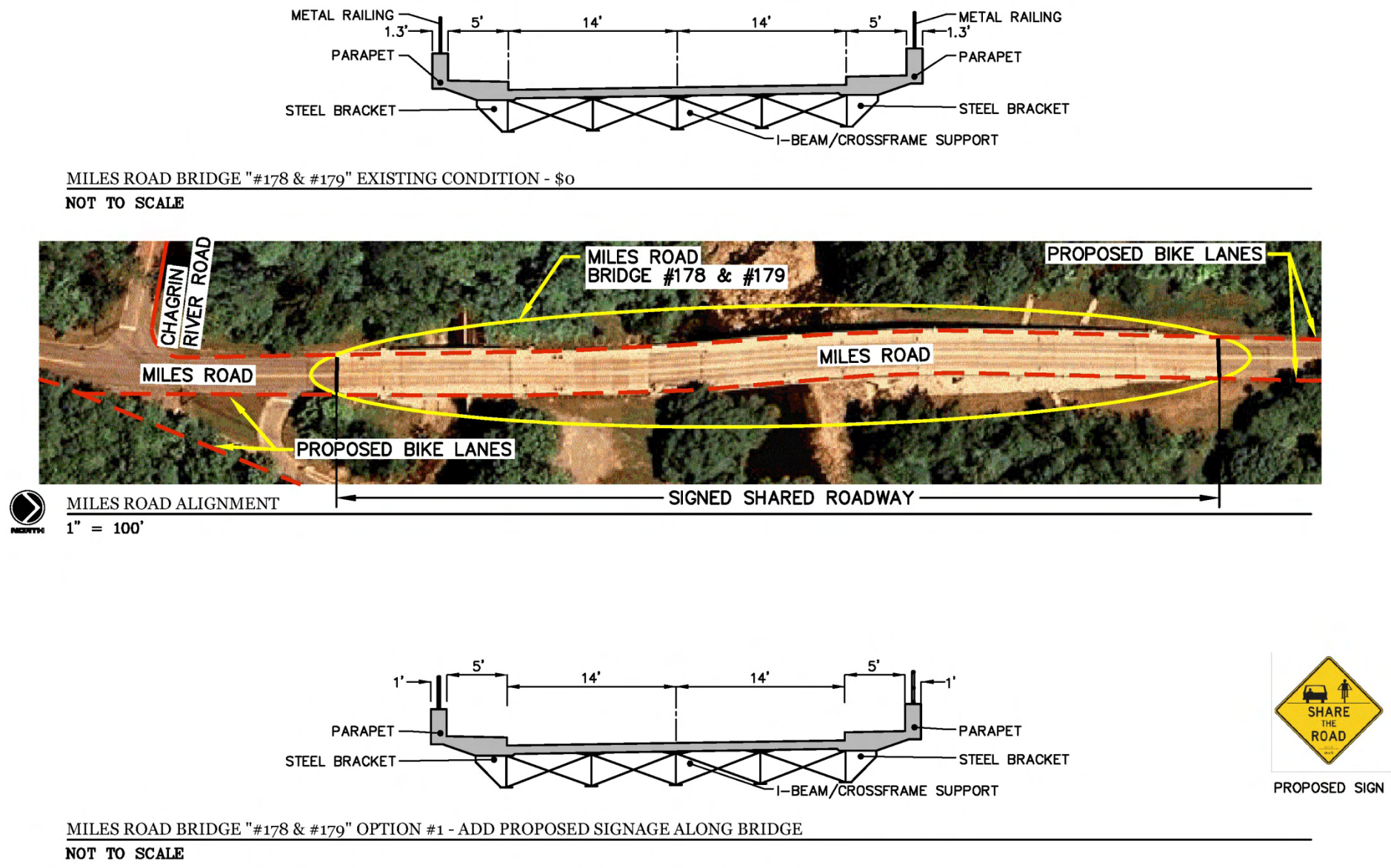


Figure 46: Chagrin River Road Bridge Modifications

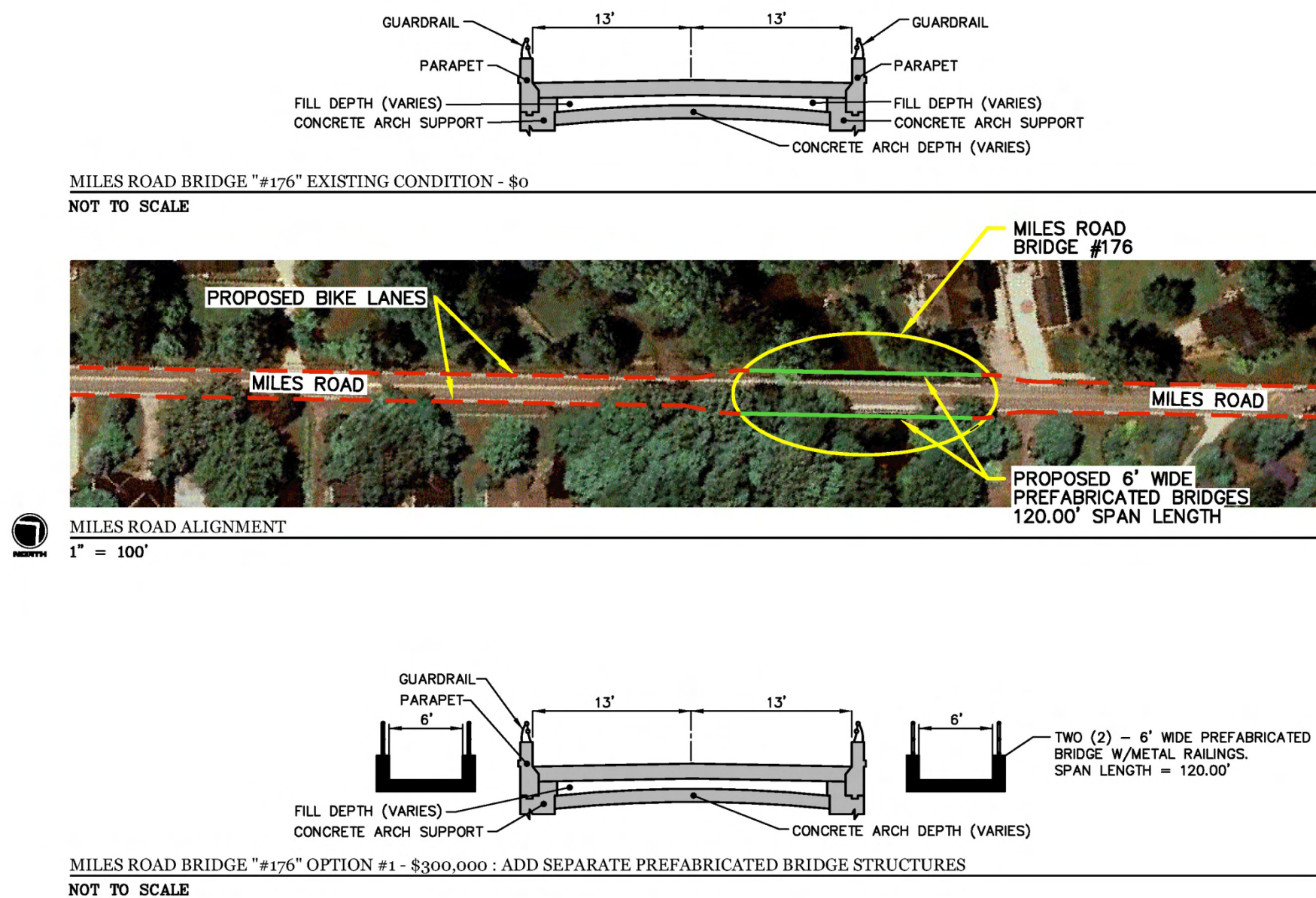




MILES ROAD BRIDGE
Bridge #178 & #179
Over Deerlick Creek
Village of Bentleyville, Ohio

Figure 47: Miles Road Bridge Modifications





MILES ROAD BRIDGE
Bridge #176
Over Chagrin River
Chagrin Falls, Ohio

4

Figure 48: Miles Road Bridge Additions

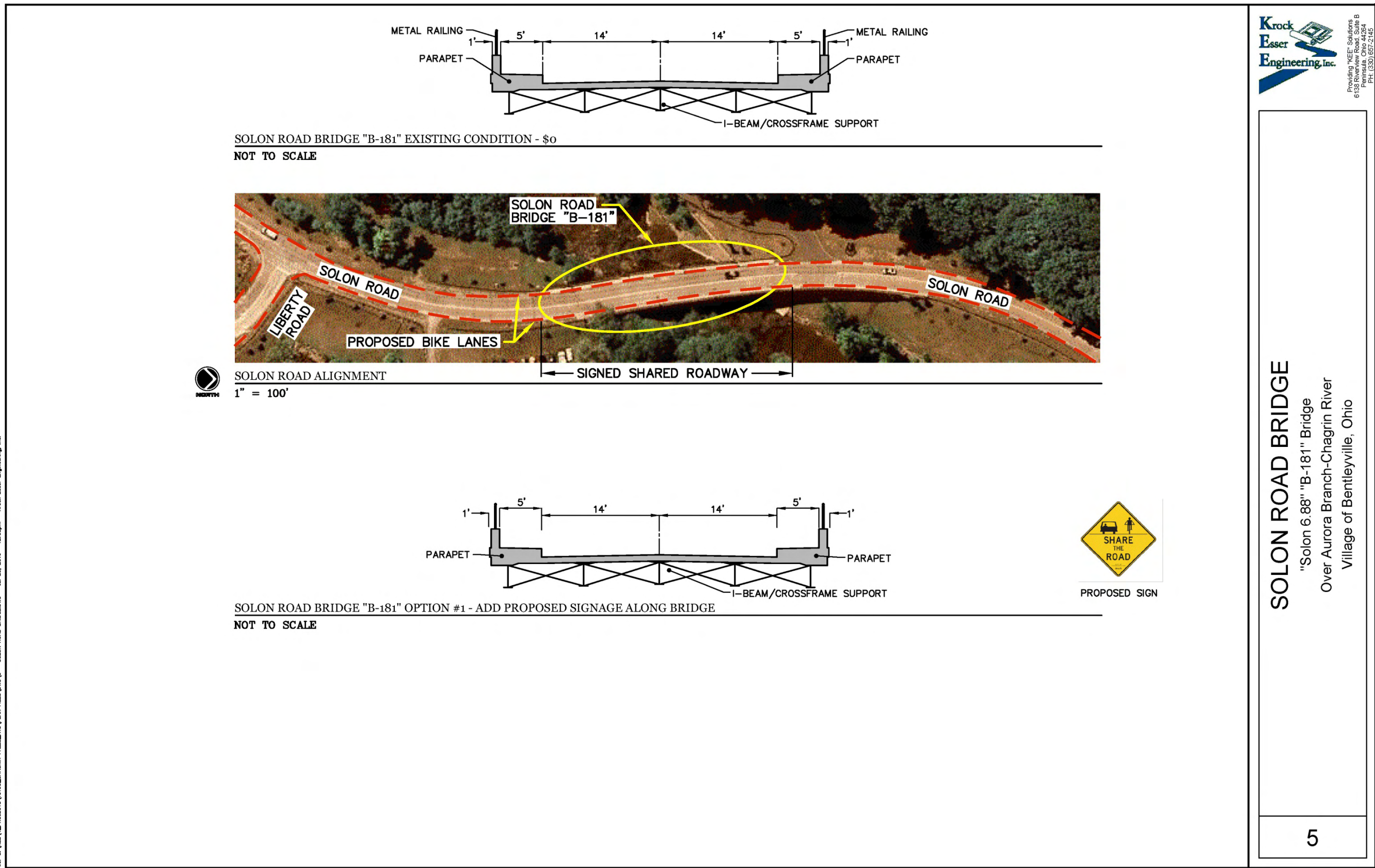


Figure 49: Solon Road Bridge Modifications



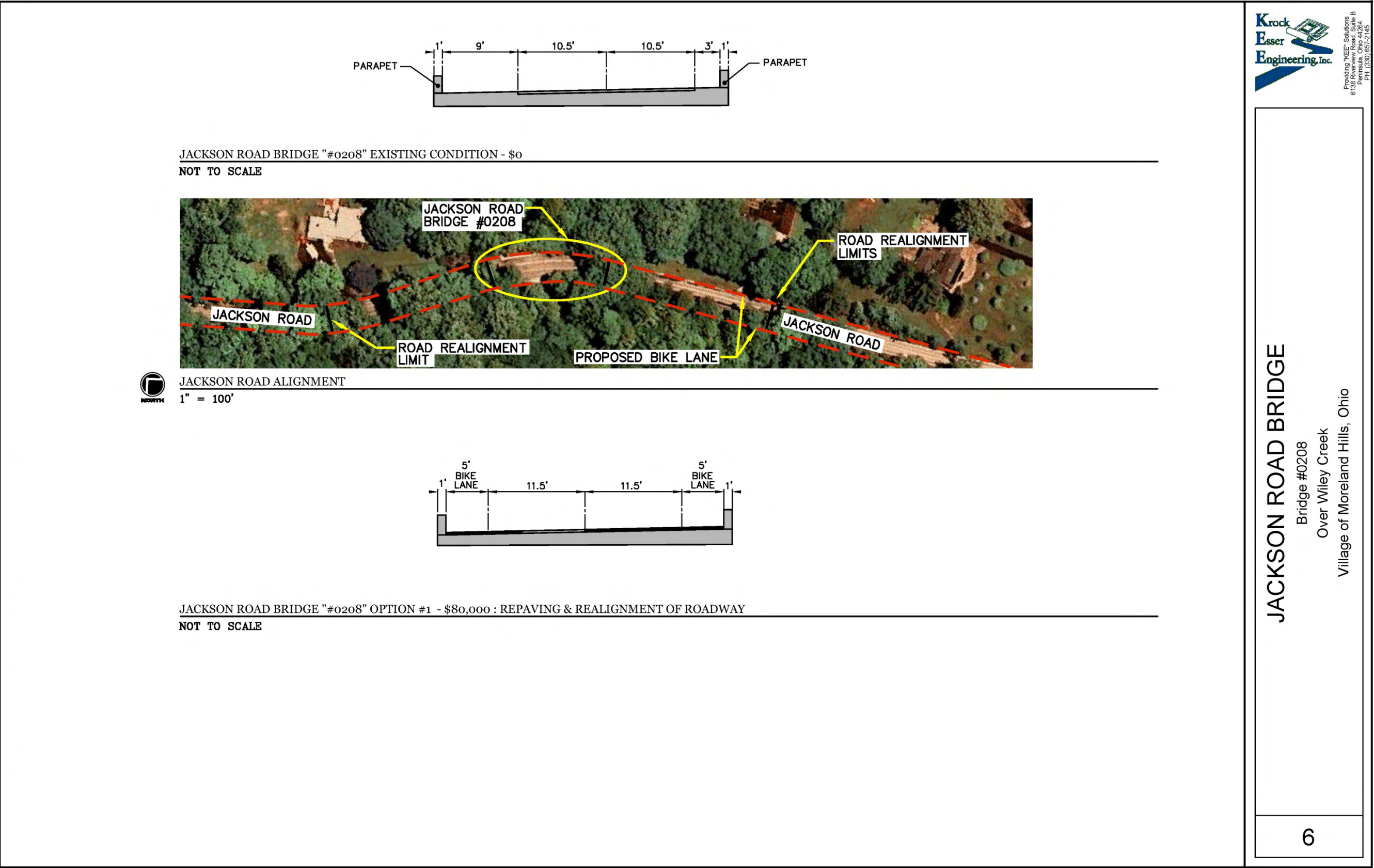


Figure 50: Jackson Road Bridge Modifications

